

CURRENT NOTES

Helping Atari Owners Through the World of Computing

Vol. 13, No. 10

Dec '93/Jan '94
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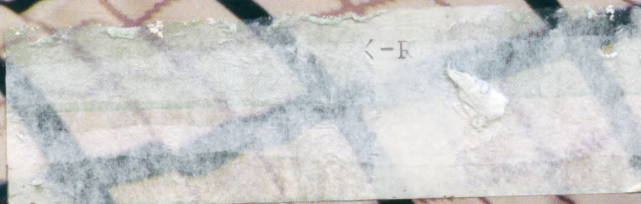
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QUANTUM	LPS240	240	16 Msec	256K	\$327
MAXTOR	7245S	245	15 Msec	64K	\$295
MAXTOR	7345S	345	14 Msec	64K	\$360
QUANTUM	LPS525	525	10 Msec	512K	\$810
MAXTOR	MXT-540SL	540	9 Msec	256K	\$899
QUANTUM	PD700	700	10 Msec	512K	\$948
QUANTUM	PD1050	1.05 GB	10 Msec	512K	\$1144
QUANTUM	PD1225	1.2 GB	10 Msec	512K	\$1271
MAXTOR	MXT-1240S	1.24Gig	9 Msec	256K	\$1340

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85 to 525 Meg- 2 Year Warranty 1050 & 1225 5 Year Warranty

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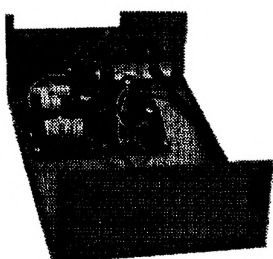
INSITE	21Meg	FLOPTICAL	w/1disk -	\$292
SYQUEST	44M	REMOVABLE		\$329
SYQUEST	88M	REMOVABLE		\$390
SYQUEST	88/44	REMOVABLE		\$480
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Complete Atari Hard Drive Systems

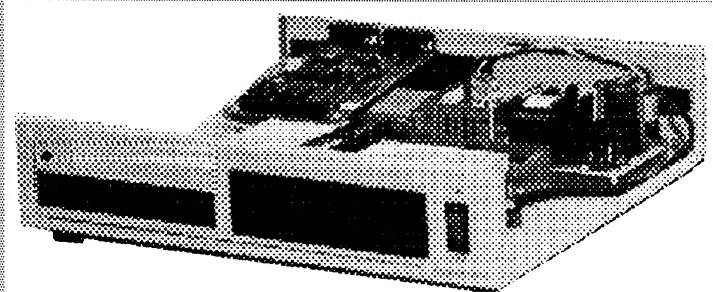
HD SIZE	CASE A	CASE B	FALCON
85	\$389	\$369	\$329
127	\$418	\$398	\$358
170	\$440	\$420	\$380
213	\$467	\$447	\$407
240	\$530	\$510	\$470
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525	\$1013	\$993	\$953
540	\$1102	\$1082	\$1042
700	\$1151	\$1131	\$1091
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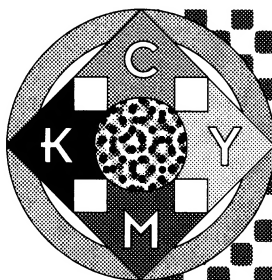
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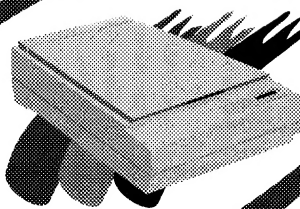
And last but not least, there is the classic **Calamus 1.09N**, our entry level page layout program with over 300 powerful functions.



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From the Editor's Desk

This is the day after Thanksgiving. I'm still a bit "stuffed," but, as you see, still plugging away at this issue of *CN*. We missed getting it done before Thanksgiving and, now, I'm afraid, we won't see the UPS truck until Monday. So, you will be reading this well into mid-December.

However, I have taken advantage of the "extra" time to prepare a little treat for the Holidays — games! I have added a large number of game disks to the *CN* library this month. Take some time out for the holidays and have some fun. To help you along, we are offering a **HOLIDAY SALE** on our PD library — purchase *any 3 disks* and get a **4th disk FREE!** Now is the time to stock up. Offer good through January 31, 1994.

Before I started this issue, I managed to complete a hard-copy version of all of Frank Sommers' "ST Update" columns, 177 pages in all. I still need a desktop published version of the reviews. The final "book" is likely to be 300+ pages. I did convert Frank's 41 reviews and articles into plain text. This collection (200 pages) has been uploaded to GENIE and CompuServe. I also plan to convert the "ST Update" columns to plain text and upload those. Both the columns and the reviews, in text format, will be available on one of our library disks for anyone who is interested.

In the Letters section this month, you will see a couple of "sample" letters from readers who have moved on to other platforms. We get new subscribers all the time, but we also lose subscribers every month. Over the past year, the balance each month has been negative. If the subscriber base keeps fading away, your continued enjoyment of *CN* will be jeopardized. However, you can help. Word of mouth is an excellent advertising medium. If every subscriber were to find just *one* additional subscriber, our circulation would be larger than it ever was. If you enjoy this magazine, please tell others about it whenever you can. Also be sure to tell advertisers where you saw their ad. Maybe you can keep me busy next month adding new names to our database.

As for this month, it's time for the Jaguar. By the time you read this, many of you may well already have your Jaguar game consoles. We have provided full coverage of Atari press releases on the Jaguar.

Are you still skeptical about getting a Falcon? Read Dave Troy's "Riding the Bus" and you will understand why the Falcon may be a better buy than many suspected. Ah, if only Atari could figure out and explain clearly why consumers should buy their computers ... maybe they should read more of *CN*!

How would you like a boost in productivity for Christmas? Read Andrzej Wrotniak's column and see if the new *Geneva* isn't just what the doctor ordered.

Finally, it is with great sadness that we bid farewell to two *CN* columnists. Steve Kiepe finds that his next military assignment, although he will still be able to write occasionally, will preclude him from continuing on as ST Editor. In addition, Mike Mortilla, who is a professional musician, has found himself happily inundated with work. So, we will also need a new correspondent to cover CompuServe. Interested applicants should contact me via any of the addresses listed in the left column of this page.

Of course, you don't have to commit to a regular column to write for *CN*. Anyone is welcome to submit articles, reviews, or tutorials. This is a magazine *for* Atari owners, written *by* Atari owners — that's *you*. I encourage you to give it a shot. Meanwhile, enjoy the holidays and we'll see you again in February.

- Joe Waters

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Time to Renew?

Take a peek at your mailing label. If you see the expression **9312** on the first line, then your subscription expires in 1993, month 12, i.e. this December issue is the last one in your current subscription. If you see **9402**, your subscription will expire in February. Please **RENEW** as soon as possible to avoid missing any issues of CN. You can renew using your MC or VISA card by calling (703) 450-4761 (evenings). Many thanks for your continued support!

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Letters to the Editor

Change for the Better

Dear Joe,

Here's to another year of *Current Notes*. I think the magazine has gotten better and better. Especially the past few issues reflect a nice change:

1) Less Atari bashing. We know about the state of Atari and don't need to be constantly reminded of it. Also it felt distracting to read articles that, no doubt, have been written six weeks before the magazine is released, while at the same time seeing Atari stock go up.

2) More articles making an "inclusive" connection to other platforms, rather than stating that "I sold my ST system in order to get a real computer..." Especially interesting were the MIDI articles about the mixing software and Music scanning/OCR.

3) More valuable programming tips and information, such as David Troy's dBMAN articles (I myself use *Superbase Pro*, but found the information quite useful) and A. Wrotniak's "...State of Mind..."

4) Fewer game reviews and even fewer tips and how to solve certain games. Coming from Europe in 1988, I was surprised from the very beginning that Atari's 16-bit machines were looked upon as game machines over here. And while even most 8-bit articles (even though I never owned an Atari 8-bit) still contain interesting and usable info—a game solution doesn't.

5) Philosophical stuff like David Small's. His article on "Doubting Computers" was great. It won't be the CEO's of Atari, Apple or IBM who will come up with creative *new* ideas, but people like David Small.

Last year in my renewal letter I mentioned a stamp that I would enclose. Of course, I forgot, then. But here it is—and I hope I'm still early enough to keep you from sending me a reminder about renewal.

Yours,
Peter Kienle
Bloomington, IN

A Labor of Love

Dear Joe,

Many thanks to you and Joyce for your continued support of Atari users, including me. I have been responsible for putting out monthly newsletters for a number of professional societies in the past, while continuing everything else necessary to survive. So I realize what a massive effort it must be to keep putting out a high-quality magazine with no more help than you can muster from the (temporarily, I hope!) dwindling Atari community.

At least, you have a number of fine writers contributing to *Current Notes*, but I have found that editing and publishing

anything regularly is an enormous burden. The bigger professional societies can afford professional publishing help, but for Atari users, this has to be a labor of love, with a bare hope of making expenses.

I believe that the way you view *Current Notes* as representing the Atari user is exactly right. Professional "boosters" and "trashers" may be useful to get all the information available, but for my needs and pleasure, I prefer your even-handed approach.

Best Regards
Carl Irwin
Tucson, AZ

Atari in Chile

Dear Gentlemen,

I don't want to miss an issue, so I didn't want to wait 'till you sent me the renewal order form. Please charge another year of my subscription ...

I would like to address some lines on one of the subjects I have seen referred by your readers. That is the lack of support they have from Atari. It would seem it's hard to be an Atarian in the US. But let me tell you something: it's even more difficult to be an Atarian in the third world!

I live in a South American country. We import goods from all over the world (we do lots of exports, too), so I imported my ST from the USA back in 1986. There used to be an Atari dealer—here in my country—who began to support STs some time after I had bought mine. He dropped STs three years later.

I made some very good friends among other ST-Atarians (while trying to get tech.info and/or support from that dealer). We now support each other. Some of us were STart subscribers but after it disappeared, we could only think Atari was going out of business. Nevertheless, many of us decided to continue using our STs until the day they would no longer run. Many others (most, I'm afraid) decided to go Macintosh or IBM.

Not knowing if there were still some ST or Atari related magazines in the USA, I turned to some UK publications. I even ordered some PD disks only to receive Game demos (which would not run in my USA born ST) instead of what I had ordered. I sent them back, and never heard from them again! I wrote to the British Consulate, and never heard from them either!

Suddenly, last year, while reading a PC related magazine, I saw an article about an Atari ST software review by Mr. John Bonavita. I wrote to him. He sent me some *CN* back issues and here I am. That should sound like a happy end to many, but it is not.

I have written and faxed to some of your advertisers so as to buy myself an STe, a HD or a Floptical drive, ... and never heard from them again!

So, don't tell ME it's hard to be an Atarian!

Jaime R. Gutierrez
Concepcion - Chile

Facing the Facts of Life

Dear Joe,

Thanks for your letter regarding my expiring subscription. I at least owe you the reasons for dropping my subscription, especially since none of them have anything to do with your magazine.

You have a fine publication. It kept me informed and sometimes encouraged about being "one of the few" Atari owners in Arkansas. I am quitting *Current Notes* because I finally faced the facts of life:

1. There is only one Atari dealer in central Arkansas and he is dropping Atari. No dealer—no local support.

2. My ST is aging (1986, first model 520 ST with TOS in ROM) and needs upgrading or replacement.

3. Without a dealer, and the "no mail order on Falcons" policy, I am faced with replacing a computer that I love with a computer that I don't love.

4. DOS, "clones" or whatever you want to call them, are supported locally, and it is the system that I have at work.

Yes, you guessed it, I am writing this letter on my new Compaq ProLinea. I would have loved to buy a Falcon. I would also like to drive a solar-powered car and watch a flat-screen high definition TV. These things are impossible for me to do now. Maybe some day.

James A. Farmer
Little Rock, AR

To Make a Long Story Short..

Dear Joe,

Just a note to let you know that I did receive your letter concerning my subscription to *Current Notes*. To make a long story short, I am writing this on my PC using *AmiPro*. I bought my Atari 1040ST in 1987 and then upgraded to a Mega 4 about two years ago. I needed the PC for work and bought a 486 DX 50 in February of this year. The only Atari programs I used consistently were *Pagestream*, *Tracker*, and *Word Writer ST*. I purchased *Corel Draw* for \$169, *Tracker for Windows* for \$69.95 and *AmiPro* (upgrade for \$89). I remember reading that you also have a PC and CD-ROM, so I'm sure you understand when I say my Atari is for sale.

Thanks again for all the good issues of *Current Notes* and I wish you and Joyce the very best for the future.

Charley Webber
Richmond, VA

He'll Wait For His Falcon

Dear Joe,

Enclosed find my subscription renewal check. I really like this magazine. I hope it grows and grows.... Recently, I returned to University and have an almost continuous use for a computer. My 2 meg STe is adequate for everything we've needed it for so far. Papers are easy to write and *Atariworks* is the best working word processor I have used for the Atari. Obviously, it needs to be upgraded to include such functions as border and columns, but it's great to be able to size the text precisely to make it all fit in the required number of pages.

Do you know of a terminal program for the Atari that will do VT200 or, better yet, VT320 emulation? This would make it much easier to use the features available to students on the VAX/VMS.

I am considering a Falcon computer. The Atari Falcon seems to be the ideal computer for a college student. For the student living in a cramped dormitory, it is simplicity itself to hook it up to a TV. Also, any one enrolled in a music class (m3) quickly appreciates its ability and connectivity. We generated titles for another class using CAD 3D2, which is an antique of a program, but still works. I would like to do video and audio overlays onto tape. It would be nice to be able to watch TV in a Falcon window while writing this in the back-ground.

One problem I have with purchasing a Falcon is the Atari Corporation. I do not know how long the 030 has been on the market, but I have yet to see one advertisement for it that was sponsored by Atari. I do not know where to buy one. The least Atari could do is run ads in publications such as your own, providing a 1-800 number that people could call for information about the computer and where to buy it. I think it's ridiculous to have to fill out application forms to buy a computer.

I understand it requires a 486/66 computer to emulate faster than an 8 MHz Atari. At that rate, it will require a pentium to emulate faster than an 030 Falcon and pentiums will not be cheap for quite awhile yet. The new Macs are pretty cool and Apple is throwing in monitors, hard drives and software. Atari take note. Frankly, Macs seem a little slow. My impression is that they don't have the versatility I've gotten used to with Atari.

Although I am in the market for a new machine, I'm in no hurry. So far, I really don't need an IBM compatible. I can take my RTF (or ASCII for that matter) files down to the school and print them on the IBM-run laser printer with few changes. Only on the Mac, however, were we able to create a satisfactory format for a shooting script. I know, Spectre GCR would have come in handy on that project. Hmmm... does it work with a Falcon.

All things considered, my STe seems to pretty much fill the bill here at school even though a Falcon would do much better. But, until Atari wakes up and actually tries to sell me one, I'm going to wait.

Carlos Romero
San Antonio, TX

Excellent Mind Food

Dear Editor,

Just received my October issue of CN. Although I have read only the least bit of it yet, I continue to be surprised and pleased by its content. Excellent reading for any computer user but, of course, especially Atari users. Not too many months ago, CN had an excellent review of several telecommunications programs including the one I have used for more than a year, *FzDT*, V2.12. The demo that you distribute from the library on disk #743 is the same one that convinced me this

was the communication program for me. I never have been disappointed by its performance. To date, I have not seen any update info in my mailbox or anywhere else, which causes me to wonder if the program is being supported at this late date. Do you or your correspondents have any information on the current status of *FzDT*?

I noted the changes in the disk library; clearly an incredible amount of work has been done. My compliments to you on the accomplishment of such a heavy duty project. Well done.

One more item, I will not repeat myself regarding the quality of *CN* writers; they are wonderful. Last issue, however, the outstanding article by Henry K. van Eyken, "Orality, Literacy, Competency" was absolutely tops! Excellent mind food. Thanks to both of you. Make that THANKS A LOT to all of *CN*'s authors.

Gary C. Matteson
GEnie:G.MATTESON2

Better Things To Do ...

Dear Joe,

I have been a regular reader of *Current Notes* for the past four years and have looked forward to each issue. While I do not have a subscription, I do buy each issue at the Computer Zone in North Attleboro, MA.

For the past four issues, I have been upset at the tone of the articles. I know people are leaving the Atari for MS-DOS machines. (They are also leaving the Mac and Amiga.) I'm getting very tired of people trying to justify why they need to spend \$3,000 on a machine that represents a step backward.

I'm tired of hearing the excuses such as: 1. It's not fast enough. A Falcon running Geneva will blow away most MS-DOS machines running windows. 2. I cannot get *MS-Word* or *Word Perfect* on this machine. *First Word Plus* is more than most folks need to do a term paper. (It can do footnotes. *MS-Word* and *Word Perfect* cannot and Atari software is easier to use for the novice.) *Atariworks* provides a very good alternative to *MS-Works*.

When you really look at the excuses, they just need to conform. By all means, please be my guest, but I have better things to do with my time than read about the whining.

Joe Heroux, President
& Newsletter Editor
North Attleboro
Atari Computer Club

WAACE / ACT Conflict?

Dear Mr. & Mrs. Waters,

I would like to congratulate you and the staff for the tenth year anniversary. The magazine, in my own opinion, is done extremely well. All the articles are in layman's terms and yet it doesn't get boring for that technical jargon reader. So keep up with the excellent work and I hope it will be around for another ten years.

There is one thing I do have in mind and that is the bitter conflict between the ACT and WAACE. I know WAACE did-

n't have an Atari convention this year due to the fact that ACT held a convention before WAACE did and because of that action, they didn't hold one. In my own opinion, they (WAACE) acted like a bunch of cry babies. They not only hurt themselves, but they also hurt the Atari vendors and the Atari community as well. I went to two WAACE conventions and I thought both were excellent; especially the one last year. In fact, I was hoping to attend the one this year but it became a phantom convention. I do not know who or how the spark started of the Hatfields and McCormicks so-called-syndrome but I wish it would stop immediately and get united once and for all. This is destroying the Atari community and the Atari industry as well. The only thing that is going for the Atari industry is the third party developers and the Atari family. If we keep fighting amongst each other, then Atari will be totally dead.

The paragraph you just read is from a concerned Atari user and it's only his opinion. I am not trying to insult, agonize, or fuel the situation at hand. What I am trying to achieve is to wake up everybody and start working side by side to find a solution to the problem. For example, find a neutral site that's large enough to house both groups at once and rename it to ECAR which stands for East Coast Atari Revelation and extend it all the way down to Florida.

This kind of turmoil has happened to the Western Mass Atari Users Group (aka W.M.A.U.G.) In the beginning it was fine. It was just a bunch of 8-biters getting together to get the most out of their computer. Until the officers didn't care. It was only a few dedicated members of the club who decided to take over the club. The membership was low; we had a tough time in getting our equipment, and that was the time when the STs started to take off. So it was the 8-biters vs STers. The morale of the club hit bottom and we were fighting like cats and dogs. It took about two years to get out of the cellar to make it a club and not a war zone. Now, we are a tight Atari family getting the most out of our STs, TTs, Falcons, but sad to say, we have no more 8-biters in the club. In a way, it's good because we can concentrate on the 16- and 32-bit machines and yet it's sad because the 8-bit is still a file machine.

The keyword here is communication. If we communicate with one another and speak what's on our minds, then we won't have this kind of confrontation. And with this, no one will be hurt in the Atari community and we can develop close relationships with our long distance neighbors, and get the most out of their/our computers.

Walter Kozial, Jr.
Chicopee, MA

Dear Walter,

The conflict you speak of is news to me. I suspect the local clubs here have enough trouble just keeping themselves together without having time to worry about clubs in other states. Clubs, of any type, need strong, dedicated leadership to prosper. Without that, they just wither away.

Joe Waters

Atari musicians...

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Atari's Jaguar Rips Into 3D Video Game Jungle

**World's First 64-bit
Game System
for Under \$250
Four Jaguar
Games Ship**



SUNNYVALE, CA.—November 4, 1993—Atari Corporation today announced the availability of Jaguar, the world's first 64-bit interactive multimedia home entertainment system. Jaguar offers a futuristic 3D game platform to home users at a suggested retail price of \$249. Atari also announced the availability of four game titles for Jaguar including *Cybermorph*, which will be bundled with the Jaguar system; *Crescent Galaxy*; *Evolution-Dino Dudes*; and *Raiden*.

Producing superior special effects and breathtaking color graphics, Jaguar depicts animated objects that appear to have no restrictions on how fast they run, fly, blast or retaliate. Each fast-paced video adventure surrounds players with Jaguar's 16-bit CD-quality audio, bombarding users with the realistic sound of human voices, racing cars, soaring jets and colliding worlds.

"Jaguar revolutionizes the video game industry by re-setting the standards for system performance and price," said Sam Tramiel, president of Atari. "Jaguar's advanced technology has the power to transform each player's living room into the game arena of their choice, whether it be a blazing battlefield, a careening space capsule or an embattled fighter plane. Atari founded the video game market and we are proud to be leading the industry to the next generation of multimedia video entertainment."

64-bit Make Multimedia a Reality

Jaguar's 64-bit technology means it processes over 100 times as much data at one time than 16-bit systems and is twice as fast as 32-bit products, which are slated to begin arriving on the market this year.

Tramiel said, "We've never believed in launching incrementally better designs. By skipping over the 32-bit architecture, Atari has made quantum leaps in

order to give customers the best performance for the price. Jaguar offers game enthusiasts the opportunity to enjoy tomorrow's hot multimedia technology today."

Specifically, Jaguar's 64-bit technology translates into:

- ☆ Spectacular true color graphics and video effects, with more than 16 million colors displayed during full-speed game play
- ☆ Three dimensional images moving in real-time that rotate, distort and change texture
- ☆ Unparalleled animation speed, which does not limit how fast players can drive, run, shoot or duck oncoming objects
- ☆ CD-quality sound blasting realistic sound effects, including dramatic music, lifelike human voices, screeching race cars and soaring fighter planes
- ☆ Adaptive lighting which adjusts to accommodate changes in distance and intensity

"The 64-bit power of Jaguar can give users 100 percent control over the action rather than positioning them as simple pawns in the middle of the game playback. Jaguar players can manipulate three-dimensional shapes in three-dimensional worlds that change in real time, without needing to pause to allow the machine's processor to catch up," Tramiel said.

Game Availability

To date, more than 20 leading developers have signed on to create game titles for the world's most advanced interactive game system. Supporting Atari's mission to provide players with the best quality software in the market, Time Warner will make its library of video clips available to Atari and its licensed publishers for use in programs for the Jaguar.

As of mid-November, the following Atari Jaguar games will be available:

★ **Cybermorph**—*Cybermorph*, which is bundled with Jaguar, makes the player a One-Man Rescue Probe sent into an interplanetary battlefield to rescue stranded survivors. As he flies in a real-time textured-mapped, polygon-based world, his craft, the Cybermorph, can assume different forms as he cruises over hills and valleys that look realistic, with lifelike shadows. A holographic face, Skylar, speaks to the player, giving him information as he races toward all 50 planets to complete his mission.

★ **Crescent Galaxy**—The player, Trevor McFur, and his sidekick, Cutter the Lynx, blast through five worlds filled with asteroids, nasty creatures and digitized protagonists. The game features full textured 3D renderings of creatures and planets with 14 levels reflecting five different worlds. (\$49.99)

★ **Evolution-Dino Dudes**—This caveman survival game combines 80 great levels of 3D true-color background graphics and CD-quality music. As a platform puzzle game, caveman characters are taught to survive by avoiding man-eating dinosaurs, discovering the spear, making fire and physically running, jumping and climbing their way up the evolutionary ladder. (\$49.99)

★ **Raiden**—In this action-packed military battle, the player controls the aircraft flying over enemy territory, shooting realistic military tanks and other aircraft while avoiding enemy gunfire and hidden missiles. This is the ultimate arcade game conversion, allowing the player to use a vertical scroller to control the aircraft as he dodges bullets, bombs, flames and debris. (\$49.99)

Two additional games are slated for availability in early 1994:

★ **Alien vs. Predator**—This tunnel/maze game has texture-mapped walls and striking digitized renderings of monsters. The player selects to be the Alien, the Predator or the Marine Corporal. The Alien, complete with a tail that whips around, and nasty jaws, smoothly scales walls to pounce upon his unsuspecting prey; the Predator uses sophisticated weaponry and superior infrared night vision to seek out his victims and the Marine Corporal depends on his piles of ammunition and sophisticated military combat computer skills to hunt and defend. Camera speed races at a high frame rate to create the ultimate in chase sequences.

★ **Checkered Flag II**—Jaguar Formula Racing hits its peak using real-time 3D generated action that allows the game player to customize racing cars. Cars,

buildings and roads are rendered in real-time 3D. Racing speed is intensified by 100 percent-true sound effects; crashes are realistic in both sound and imagery, with parts flying and tires screeching. With this sweaty-palms racing game, players will practically feel the wind in their hair.

Pricing and Availability

Available in New York and San Francisco in mid-November, Jaguar is priced at \$249. A complete roll-out in the United States and Europe is slated for early 1994. Video games are expected to range from \$39 to \$69. In 1994, Atari plans to release a \$200 double-speed Jaguar CD peripheral, which will play conventional audio CDs and Jaguar game CDs.

Jaguar is the only video game system manufactured in the United States. Atari has contracted IBM corporation to manufacture the Jaguar in its Charlotte, N.C. plant. IBM is also responsible for all component sourcing, testing, packaging and distribution.

Atari Jaguar Fact Sheet

Product Description: Jaguar is the world's first 64-bit interactive multimedia home entertainment system.

Architecture: Jaguar features a 64-bit architecture, making it the world's most powerful game system. Jaguar is more than twice as fast as 32-bit platforms.

Main Features: High-speed animation; Realistic, textured 3D graphics; CD-quality sound; Rich, striking color display; Arcade-quality output; Sleek, high-tech system design; Advanced controller with customizable 12-button keypad.

Available Games: Available in mid-November 1993: *Cybermorph* (bundled with Jaguar); *Crescent Galaxy*; *Evolution Dino-Dudes*; *Raiden*.

Manufacturer: IBM Corporation's Charlotte, N.C. facility will manufacture Jaguar. Jaguar is the only video game entertainment system made in the United States.

Price: Jaguar's suggested retail price, bundled with *Cybermorph* video game, is \$249. All other available Jaguar video games are \$49.99.

Future Options: Double CD-ROM drive peripheral; Interface to allow friends to play over phone and cable lines; Virtual reality helmet.

Retail Availability: Jaguar can be purchased in New York and San Francisco in mid-November. A complete product roll-out in the United States and Europe is slated for early 1994.

What People are Saying About Jaguar

THE REVIEWERS

Silicon Valley's best-kept secret has suddenly become an all-too-cool reality. Atari Corporation is finally unleashing its Jaguar—a 64-bit super system that will be staring down the Genesis, SNES and 3DO ... Multi-media and networking are the wave of the future, and Atari's got a bunch of secret weapons to add more bite to the Jag. It [Atari] may well become king of the jungle once again.

— *The Desk Jockey, GAMEPRO Magazine*

The combination of the \$200 price tag and the 64-bit technology is totally revolutionary ... this could go through the roof.

— *Bill Kunkel, Electronic Games*

Yikes, a 64-bit system for \$200 bucks, sign me up! ... Atari is sure to pick up tons of support, as just about every enthusiast gamer will be banging at the door of their local game stores as soon as the system is released. How can you go wrong? A 64-bit system for \$200 ... '94 should be an interesting year.

— *GameFan Magazine*

For \$250 [product bundled with software], I'm very impressed with the Jaguar ... I would actually spend my own money—not a lot of journalists would say that about a product. But, I would go out and buy a Jag.

— *Glenn Rubenstein, San Francisco Examiner*

This is one powerful cat. Atari says there's never been anything like it and we believe it ... The audio system offers 16-bit stereo CD-quality sound and can reproduce realistic sound effects as well as lifelike human voices. Big game hunters will hear this cat coming!

— *Joyce Worley, Electronic Games*

Analysts agree that the Jaguar is technologically innovative, boasting a new 64-bit system that's much faster than the 16-bit Sega and Nintendo machines.

— *Louise Lee, Oakland Tribune*

This machine will be a great piece of hardware ... They [Atari] are well beyond what Sega and Nintendo have for their game machines ... The graphics are extremely impressive.

— *Wes Nihei, GAMEPRO Magazine*

Atari's snazzy new video game machine uses sophisticated technology to play games with near movie-quality animation and high-fidelity sound.

— *Ken Siegmann, San Francisco Chronicle*

THE DEVELOPERS

Attention to Detail (Cybermorph)

★ Every developer wants to create a game that makes the player experience the intensity of the adventure. Getting the Cybermorph craft to "morph" into different forms that appear to mold with the landscape it flies over achieves this goal. Players will find that the speed and the motion of the craft causes their own bodies to rise and fall in their chairs. Their heads will jerk in reflex reaction to oncoming obstacles and their hands must react quickly in order to bring the craft and survivors safely through the mission.

★ When creative ideas pop into our minds, Jaguar's flexibility lets us take advantage of more sound, more color, more images, more layers of texture, smoke, fog—everything we need to make it happen.

★ Jaguar's strength is that the player feels the action—he can enjoy the exhilarating speed and energy as he flies the ship straight down into a canyon.

★ We took advantage of the CD quality sound and stereo capabilities to enhance the player's experience. If game players wear headphones while they play Cybermorph, they will actually hear shots coming from the left before they see them. Also, the holographic face uses the audio capabilities in its eerie speaking voice.

[*Attention to Detail, Unit 3, Nunhold Business Centre, Dark Lane, Hatton, Warwick, England CV35 8XB. Phone 44 926 843 444; Fax: 44 926 843 363.*]

Atari Corp (Crescent Galaxy)

* The difference between developing for conventional game platforms and developing for Jaguar's 64-bit architecture is like the difference between driving a Hyundai and a Formula One race car.

* Developers benefit greatly from Jaguar's high processing speed—it allows them to push the limits of 3D graphics. They can use up to 16 million colors as well as endless textures and display them all on the screen at one time. Working with 3D true-color images allows developers to ensure games look real.

* Jaguar allows for wonderful game play. Ultimately, this is what the consumer is looking for.

[*Atari Corp, 1196 Borregas Avenue, Sunnyvale, CA 94089-1302. Phone: (408) 745-2000; Fax: (408) 745-8800.*]

Imagitec (Evolution Dino-Dudes/Raiden)

- * With Jaguar, developers are able to actually create what other platforms will not support. What was once a mere fantasy in the developer's mind can come to life with Jaguar's 64-bit animation speed, true-color graphics and CD-sound. Jaguar blurs the fine line between reality and fiction.
- * The main benefit of developing video games for a 64-bit architecture is that it opens up new avenues for art work. This gives developers the ability to express complex ideas in video form.
- * Creating on platforms with less processing power would be like stepping backward—stunting the developer's creativity with old boundaries. There's no turning back now.

[Imagitec Design Inc., Suite 202-204, Field House, No. 15 Wellington Road, Dewsbury, West Yorkshire, England WF131HF. Phone: 44 924 461 115; Fax: 44 924 463 601.]

Rebellion (Alien vs Predator/Checkered Flag II)

- * Jaguar is 100 percent faster than anything else in the market ... with Jaguar there are no limits. The 64-bit power gives you complete creative freedom.

- * The question is no longer what we can or cannot put on the screen. With Jaguar, the speed and tools are available. Now we are faced with the wonderful challenge of getting our great ideas implemented.
- * The first thing players will notice is Jaguar's spectacular colors and 3D images. Jaguar allows developers to overcome all previous video boundaries to deliver realistic, high-speed 3D worlds.
- * The video possibilities we thought were mere science fiction are becoming science fact. Jaguar has permitted developers to turn their wildest ideas into reality—to introduce a virtual video dreamland.
- * As for the future, Jaguar will continue to challenge developers and players. A CD peripheral further expands storage space—opening up even more creative avenues. And, Jaguar's virtual reality helmet will put even more motion in the game. Players will find it difficult to distinguish reality from game fiction.

[Rebellion Software Ltd., Magdalen Center, Oxford Science Park, Oxford, England OX4 4FA. Phone: 44 865 784 555; Fax: 44 865 784 556.]

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Ten Questions About Jaguar's 64-Bit Technology

1. What does 64-bit mean?

"64-bit" refers to the amount of data Jaguar can process at one time. Because Jaguar processes data 64 bits at a time—versus 8, 16, and 32 bits for other video game systems—Jaguar delivers unprecedented animation speed, true-color graphics and stereo CD-quality sound. Jaguar is the world's first 64-bit interactive multimedia home entertainment system.

2. What are the main differences players will notice when using 64-bit systems as compared to conventional machines and newer 32-bit systems?

The biggest difference players will notice is an enormous increase in the overall speed and smoothness of objects in motion in their video games. Game players will be able to manipulate and respond to game action much more quickly and objects will travel at high animation speed. In addition, players will notice a significant improvement in the appearance of their video games: colors will be brighter and more numerous, graphics will appear clearer and extremely realistic, 3D objects will feature multi-textured surfaces, special effects will be much more sophisticated and games will include true-to-life lighting and shadows. Game realism will also be enhanced by sound effects generated in CD-quality audio.

3. How does Jaguar achieve its 64-bit processing power?

Jaguar achieves its processing power through an advanced architecture that features a 64-bit data bus. This bus acts like a 64-lane freeway, permitting data "traffic" to flow 64-bits at a time. Five processors work together to move data through the bus including:

- ★ The Atari-proprietary 64-bit Graphics Processing Unit (GPU) with RISC technology—responsible for delivering Jaguar's complex 3D graphics at high animation speed.
- ★ The Atari-developed 32-bit Digital Signal Processor—delivers Jaguar's CD and stereo sound capabilities
- ★ The Object Processor—provides an advanced video environment
- ★ The Blitter Graphics Accelerator—rapidly manipulates and copies images
- ★ The 68000 16-bit processor—manages secondary processing functions

4. If Jaguar includes a 16-bit processor, how can it be a true 64-bit system?

Jaguar is a true 64-bit system because it moves data through a 64-bit data bus. While it includes a 16-bit processor, this processor plays only a minor role in system performance. This processor acts as a necessary, but less important, stage hand—managing minor processing functions, including reading joystick commands and distributing workloads to system components.

5. In video game systems, what is the relationship between processing speed and video graphics?

The processing speed of a video game platform has a direct relationship to the quality of video graphics it is capable of generating. When graphics are complex and include many colors, the system needs more power to maintain high-quality animation speeds from cartridge to screen without degradation.

Atari Jaguar's 64-bit processing speed allows the system to display more than 16 million colors with an animation speed greater than 850 million pixels per second. This means Jaguar's 3D graphics are very realistic, with bright colors and fast moving action.

This performance is significantly better than that of 32-bit machines, which display 16.7 million colors, but are only able to move 64 million pixels per second. This means Jaguar's 3D graphics are very realistic, with bright colors and fast moving action.

This performance is significantly better than that of 32-bit machines, which display 16.7 million colors, but are only able to move 64 million pixels per second. In other words, 32-bit systems have just as much color traffic as Jaguar, but they are trying to squeeze the same number of colors onto a 32-lane highway instead of a 64-lane freeway. This can result in grainier graphics, fewer colors used and slower animation speed.

6. How has Atari been able to leapfrog 32-bit systems?

Atari Corporation has been able to leapfrog 32-bit systems because the company made a commitment to meet the needs of the industry by making a quantum leap to the 64-bit architecture. Atari backed this commitment with resources, including the world's finest engineers and the industry's most experienced management team. This combination of vision, dedication and talent allowed Atari to build Jaguar's proprietary 64-bit hardware and deliver Jaguar to customers while the company's competitors were still struggling to develop and market less powerful products.

7. How is Atari able to offer advanced 64-bit technology at such a competitive price?

Jaguar retails for \$249 (bundled with one video game), when much less powerful systems are selling for \$700 and up. Atari is able to offer the world's most advanced video game system to consumers at such an affordable price because:

- ★ Atari hires and retains the world's best engineers. This allowed Atari to reduce Jaguar's time-to-market by ensuring the development cycle was efficient and the design was high quality.
- ★ Atari is the sole investor in Jaguar and thus, operating overhead is much lower than it is for competitive systems in which multiple investors receive a portion of the profits.
- ★ Atari founded the video game industry and was able to apply more than 20 years of expertise to the cost-efficient development of Jaguar.

8. How do developers benefit from Jaguar's 64-bit processing power?

With Jaguar, developers enjoy unsurpassed ease in creating real-time 3D worlds. Because developing games for Jaguar is easier and less time consuming than it is for conventional platforms, developers are able to spend much more time on the creative process. Creatively, Jaguar's 64-bit

processing power gives developers the flexibility to create Orevolutionary video games that are much richer in color, animation, texture and sound than traditional game systems.

9. What will be the industry standard for interactive multimedia performance?

Atari's Jaguar has moved ahead of the competition to set the industry standard for interactive multimedia performance. Jaguar's 64-bit technology gives players the features and functionality they need today while also supplying the power and components, such as virtual reality and CD-ROM, to ensure they can move successfully into the future. It will be years before players and developers exhaust Jaguar's potential and competitive systems catch up to Jaguar in terms of price and performance.

10. What lies ahead for Jaguar users?

Jaguar's advanced 64-bit technology will allow users to expand the system's capabilities by adding peripherals without decreasing system performance. For example, in 1994, users can look forward to the release of Jaguar's CD-ROM peripheral. Atari also plans to develop and market a Jaguar virtual reality helmet.

[Questions and answers supplied by Terry Valeski, Atari Corporation, (408) 745-8852.]

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- Cyrel Sunrise Graphic Card
- CompoScript
- Home Accounts 2
- ST Accounts

- Safari Fonts
- Universal Item Selector III
- Universal Network
- Invasion Elite
- Mug Shot!
- Diamond Back II
- Diamond Edge
- ST Assembly Language
- That's Write
- MegaPaint Professional
- DC Utilities
- Avant Vector
- Arabesque Professional
- Sudden View
- DC Desktop
- DC Shower
- WERCS
- HiSoft Basic
- Hard Disk Sentry
- and the list goes on and

Atari Jaguar Features and Benefits

What precisely do the new features found in the Jaguar offer game players? Below we offer a list of the new Jaguar technological features and the specific benefits they provide.

Architecture – Unprecedented System Performance

64-Bit Data Bus allows the Jaguar to process over 100 times as much data at one time than 16-bit games and twice as much as 32-bit game systems. This significantly increases speed and lets game players experience superior graphic performance and animation action.

Speed and Graphics – Unmatched Speed, Animation and Color

64-bit Graphics Chip delivers complex 3D graphics at high animation speed. It packs the screen with 16 million colors in 24-bit true-color during full-speed game play. With Jaguar, each pixel (screen images are made up of thousands and even millions of pixels) can be one of 16 million combinations, making each video game rich in 3D color. An unlimited number of textures can be placed on the screen as well. This chip allows the Jaguar to be connected to televisions in both the United States and Europe. Atari offers two versions of Jaguar, one that is compatible with the United States' NTSC 525-line color-TV system and one for the PAL European 625-line color-TV system.

Blitter/Shader works closely with the Graphics Processor and the Object Processor to render shaded polygons and move on-screen objects at full bus speed. It performs graphic acceleration, delivering a full range of logical operations at the maximum bus speed including special effects such as buffering and shading.

Programmable Object Processor allows players to experience video games that include a combination of the best video resolutions while maintaining full graphic speed and interactivity. The interaction among the Blitter, the 64-bit Graphics Processor and the Object Processor add to Jaguar's unmatched 3D graphics and video performance.

MC68000 Chip manages minor processing functions including reading joystick commands and seamlessly distributing these commands to the appropriate system components. The 68000 chip requires a minimal amount of bandwidth to perform its duties, freeing resources to allow Jaguar to perform more complex processing activities.

Audio – CD-Quality Sound

Digital Signal Processor generates CD-quality stereo sound. Games are filled with realistic sampled sounds including human voices, cars racing, jets soaring as well as a wide range of music and sound synthesis techniques such as wave table, FM, AM and sampled synthesis.

Design – Sleek, Futuristic Design

Black 17-Button Controller lets game players interact with video environments through an advanced 17-button controller that features three fire buttons, two select buttons and a 12-button keypad. Plastic overlays slide onto the 12-button keypad to provide additional options during game play.

ComLynx I/O allows game players to network multi-console games with their Jaguar.

Two Controller Ports allow the addition of new external digital and analog interfaces. Players can also use these ports to connect keyboards, light guns and mice.

Storage Capacity – Quick System Response Time

16-Megabytes of RAM enable game players to access an entire 16-Megabyte game in Random Access Memory space, eliminating the screen performance delays found in traditional consumer entertainment devices.

Compression – High Quality Game Playback

ROM Cartridge supports a capacity of 48 Megabytes of compressed or uncompressed code. Enables complex games to run on Jaguar without any degradation in speed or quality.

Special Effects – Realistic, 3D Animation

Lighting permits Jaguar to automatically illuminate objects based on their location relative to the light source(s). For example, if the video environment is a race track in the evening, the moon light will beam off the tops of the polished racing cars, creating realistic shading.

Morphing transforms animate and inanimate objects from one image to another. A frog can become a prince, a lamp may transform into a genie and a battleship can turn into a submarine, all in real-time.

Texture Mapping wraps simple and complex images onto any 3D object to achieve special effects like flashing lights, aging and speed. An unlimited number of textures and images can be made part of the surface of complex objects.

Transparency enhances video scenes where smoke, shadows and/or fog add realism to the game experience.

Warping produces realistic simulations of the interaction between physical objects, such as a football bounding off the ground. It is also used to produce cartoon-like imagery.

Expansion Features – Future Options

8-Megabit Per Second Synchronous Serial Port provides game players with the flexibility to add new peripherals, such as modem interfaces and virtual reality devices. A high-speed telephone interface planned for 1994 will let users play against friends over phone lines or connect with national networks.

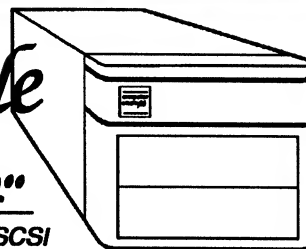
Double-Speed CD-ROM Drive, planned for 1994, this peripheral will allow game players to play video games via CD-ROM, CD audio and full-motion video.



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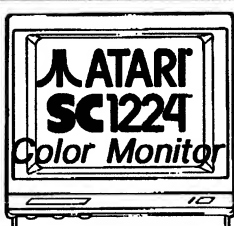
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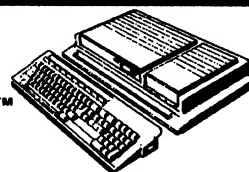
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APE Newsletter Launched

The *Atari Portable Entertainment* (APE) Newsletter has been covering the Lynx since 1990, providing its readers with the kind of news and game playing tips necessary to thoroughly enjoy the most powerful portable system available. The Lynx is about to get a new powerful big brother (the Jaguar) and APE is expanding its coverage to both of these cats. APE now stands for ... *Atari Power Entertainment*.

If you'd like to check out a FREE sample copy of the next issue, drop a message to me via Genie Mail. You'll receive Issue 12 of APE, info on subscribing and on the availability of back issues. It makes an excellent Christmas gift! Send your mailing address to C.SMITH89

Thanks for your support. Clint Smith, Editor, APE Newsletter.

STalker Script Automates GENie Access

Oracle for *STalker 1.02* by Paul Lefebvre is a *STalker* BackTALK script that automates access to GENie. This is the first such program to work on the Falcon030 and to perform its tasks in the background. *Oracle* allows GENie users to cut their online cost because it automatically sends and receives mail and BB messages, and downloads library files. Any mail or messages can be viewed offline and replies can be typed offline. To save GENie users even more money, *Oracle* can be told to perform its tasks late at night to save on long distance charges. *Oracle* is fully compatible with *Geneva* and *MultiTOS* to allow all of its operations to be performed in a multitasking environment.

Oracle is SHAREWARE. Registration includes the latest version of *Oracle* installed in your name, the *STalky 1.2* type ahead buffer for *STalker*, and free updates. Free support is always available on GENie.

System Requirements for *Oracle* are : an Atari ST/STe/TT/Falcon030 computer, and *STalker 3* (*STeno* is recommended). *Oracle* for *STalker 1.02* (GENie version) is available for \$15 (plus \$2 shipping) from:

Paul Lefebvre
78 Winter Street
Portland, ME 04102

Version 1.0 is available on the GENie Atari ST RoundTable Library as file #30377. Questions? Leave email to P.LEFEBVRE or visit category 17, topic 22 in the BB in the Atari ST RoundTable.

Grocery Lister Version 4.0 Released

The Grocery Lister is a household utility program that allows you to compile a list of grocery items complete with current price and total estimated cost. *The Grocery Lister* can be used to determine approximately how much you will spend at the store if you know the items that you need, or it can be used as a budget tool to allow you to select the items you most need or want if you only have a fixed amount to spend. The grocery database serves as a useful reminder of items which you may need as you compile your grocery list. Finally, for those who have 'errand boys' do the shopping, *The Grocery Lister* will generate a very neat and easy to read printout of the current grocery list.

The Grocery Lister has many advanced features as well as an easy-to-use, mouse driven, multiple-windowed GEM interface. A single grocery database file can have grocery item information including item name, category, location, coupon or sale flag, a taxable flag, and a price for up to 4 stores. A grocery list can be created for up to 10 stores at one time by loading in other grocery database files. The list is then printed with items grouped by store so you know exactly what to get at each store. There is also a feature that will automatically select items from the store with the lowest price so you can price shop at multiple stores without thinking about it.

The Grocery Lister also has many advanced editing, sorting, and display options to provide maximum flexibility and ease of use. For example, the grocery list can be sorted by location so that items appear in the list as you would find them in the store. No need to search up and down the list to see if you missed anything on the canned goods aisle, the items are all right there in one spot on the list.

The Grocery Lister has been tested on various ST, STe, Mega, TT, and Falcon machines and runs in any medium to high resolution. A partially disabled demo version is available on GENie and various other on-line sources. (CN Library disk #839 includes the demo version of *Grocery Lister* as well as demos of *EZDesk*, *MIDI Spy*, and Version 2.04 of *Mega-Check*.)

The Grocery Lister also has a flexible pricing structure. You can order the software direct from the author for \$20.00 + \$5.00 shipping and handling + \$5.00 for a printed user manual. You can substitute a blank floppy and large self-addressed stamped envelope for the \$5.00 shipping charge or you

can choose to only receive the program documentation on disk. As a special bonus, *The Grocery Lister* comes with a database of nearly 1000 items!

For more information or, to order your copy direct, contact:

Randy Hoekstra
3414 Norwood Circle
Richardson, Texas 75082
Genie: R.Hoekstra1

MIDI Master Drummer 2.5

Zobozian Software announces the release of *MIDI Master Drummer 2.5*. The best drum pattern generator for the Atari ST/TT family of computers just got better!

Already a powerful MIDI rhythm sequencer and pattern generator, *MMD 2.5* offers the following new features:

- * Full Falcon 030 compatibility. *MMD 2.5* is now compatible with all versions of TOS and will run on all Atari ST/TT systems in both medium and high resolution.
- * Extensive online help. The entire manual is available during program operation and individual topics may be selected from a menu.
- * Both formats of Standard MIDI Files are supported.
- * Drum pitch input via MIDI as well as mouse.
- * Full MIDI note range (0-127)
- * Programmable note velocities for accents.
- * Nameable patterns, phrases, and songs.
- * Randomizable phrases and songs (also shuffled and scrambled song part orders)
- * Many, many editing enhancements (like compress/expand pattern) that save time and offer more control over rhythm parameters.

MIDI Master Drummer 2.5 is available now from Zobozian Software. Only \$44.95 (shipping incl.) Please send a check or money order to:

Zobozian Software
P.O. Box 6901
Grand Rapids, MI 49516-6901

For additional information, please call (616) 784-4570 or fax to (616) 784-0193.

Papa's Grafik Guide to AtariWorks Word Processor

The first in a trilogy of tutorial/reference books for *AtariWorks* users, *Papa's Grafik Guide to AtariWorks Word Processor* is 100+ screen shots of *AtariWorks* WP in action with complete explanations of every documented and undocumented function. Create Format/Style macros, details of graphics handling (including text wrap around), import and format database records, newsletters, multi-column pamphlets/book-

lets/brochures, text effects with Speedo fonts, use label maker to create business cards, invitations, etc.

Aimed at the beginning to intermediate level *AtariWorks* user, *Papa's Grafik Guide* has meat in it for even advanced power users.

Grafik Guides to *AtariWorks Database* and *Spreadsheet* planned for release in first quarter of 1994.

Sample copies are being mailed to Atari dealers throughout the US and Canada over the next few weeks and should be available off the shelf by December. Price is \$16.95.

If you don't have a nearby dealer or just can't wait until December you may order direct from:

Papa's Grafik Press
1228 N. School Street
Honolulu, HI 96817

Please include check or money order for \$16.95 plus \$2.00 shipping and handling. Your copy will be mailed via Express Mail within 24 hours of receipt of order.

BA Announces 24-Hr Customer Support

Branch Always Software, makers of the *Gemulator 3.0* Atari ST Emulator, are happy to announce the addition of a new customer support phone number, extended fax and voice hours, as well as new voice mail support. This will allow us to better support our current *Gemulator* product, handle orders faster, and support our new releases in the new year.

Effective Monday November 15 our current phone number 206-885-5893 will become a dedicated fax line available 24 hours a day. Use the fax number to request ordering, pricing, and other product information, and specify whether you would like the information to be faxed back to you or mailed out. Be sure to include a return address or fax number.

Our voice support is moving to a new number, 206-369-5513, and will be available 24 hours a day for both live support and voice mail. Live support hours are being extended to 6 days a week, Monday through Saturday, from 10am to 3pm (eastern time) daily. During all other hours of the week the number will access our new voice mail system allowing you to place orders and request newsletters 24 hours a day.

If you have any questions about our *Gemulator* product, its pricing or availability, or need help using it, feel free to phone or fax us at the new number any time after November 15. Or write to us at the address below.

If you have not yet received your copy of our *Brasoft News* newsletter, please send us your name and mailing address to receive the current issue which discusses our *Gemulator 3.0* product. You will also receive our upcoming January issue which contains new product release announcements.

Branch Always Software, 14150 N.E. 20th St., Suite 302, Bellevue, WA 98007 U.S.A Phones: voice 206-369-5513; fax 206-885-5893. We can also be reached via email on GENie at BRASOFT and on CompuServe at 73657,2714.

Compo Announces Studio Photo

Studio Photo turns your Atari computer into a complete photographic studio, providing a suite of tools to retouch images and much, much more...

Studio Photo lets you create and retouch true color (24-bit) images on any Atari computer. It always works with an internal palette of 16.7 million colors, regardless of video display. If you load a 24-bit scanned image, you can successfully retouch it on any Atari, even a monochrome system. *Studio Photo* will adapt to whatever video mode you're working in to display an image.

Definable filters allow you to adjust brightness, contrast, and hue in an image. Preset filters are available to quickly change brightness, contrast, and sharpness. Convolution filters let you dramatically alter images for practical and artistic effects. Convolution filters are user-definable, but *Studio Photo* does include a set of preset filters including Derived, Laplacien, Sobel, Prewitt, Kirsh, sharpen, blur, outline, and anti-aliasing. In addition, effects such as spherize, rotate, resize, mosaic, and mirror are built-in.

The tool palette includes pencil, paintbrush, airbrush, sharpener, water (blur), finger (smudge), rubber stamp (copier), eraser, eyedropper (color picker), cropper, bucket (color fill), and others. Tool parameters include tolerance, opaque/hue operation, blur, strength, and brush size and shape. Tools can be used directly or applied along a line or bezier curve.

Studio Photo supports many file formats, including SEF, TIFF, GIF, Targa, PCX, IFF, Degas, Neochrome, JPEG, and Photo CD. A CD ROM driver is included for accessing and controlling a CD ROM drive. *Studio Photo* is enhanced on Falcon030 computers, optionally using DSP-based JPEG decompression for remarkably fast image retrieval. *Studio Photo* also includes separate programs for 68000 and 68030 processors to make the most of your computer system.

Studio Photo is available now for \$99.95 from:

COMPO Software Corp.

104 Esplanade Ave, Suite 121

Pacifica CA 94044 USA

Tel 415-355-0862; Fax 415-355-0869. GENie: COMPO.

Missionware Presents ... The Autumn Classic!

Missionware Software has announced a sale on all of their software products. (These products were de-

scribed in the November issue of *Current Notes*.) The products, the normal price and the sale prices are listed below:

1. Crossword Creator II	\$34.95	\$29.95
2. Word Search Creator	\$34.95	\$29.95
Puzzle Pack (1+2)	\$49.95	\$44.95
3. The Cryptographer	\$34.95	\$24.95
All three (1+2+3)		\$59.95
4. lottODDS	\$34.95	\$29.95
5. Printer Initializer	\$24.95	\$19.95
All Five		\$89.95
Any three		\$59.95

Flash II — There is no sale on *Flash II* right now; however, if you purchase *Flash II* for the regular price of \$49.95, for an extra \$15 you can purchase any of the above programs. Each additional program is only \$15 more. Not only that, but when you purchase *Flash II* with an additional program(s), we'll ship everything to you postage paid! There'll be no additional \$4 shipping and handling fee!

These sale prices are good only through December 31, 1993 and only from Missionware Software. We accept checks, money orders, and Visa or MasterCard.

Missionware Software

354 N. Winston Drive

Palatine, IL 60067-4132 USA

Phone 708-359-9565. Electronic mail: BIX: jtrautschold; CompuServe: 71333,1003; Delphi: MISSIONWARE; GENie: J.TRAUTSCHOL; Internet: jtrautschold@genie.geis.com

All domestic and Canadian orders must include \$4 for shipping and handling (except for the special *Flash II* package mentioned above). Overseas orders must include \$8 for shipping. Residents of Illinois must include 6.75% sales tax.

SAC Exposition: 12-13 March 1994

The second annual Sacramento Atari Computer Exposition will be held Saturday and Sunday, March 12 & 13, 1994. The show will run from 10 am to 6 pm on Saturday; 10 am to 4 pm on Sunday. The event will again be held at the Towe Ford Museum near Old Sacramento: 2200 Front Street, Sacramento, California 95818.

The museum in which the show will be held houses the world's most complete antique Ford automobile collection with over 170 vehicles. Near historic Old Town Sacramento, the Museum is just around the corner from the Crocker Art Museum, the California Railroad Museum, and the California State Capital building. As an added draw, showgoers will also be admitted free into the auto exhibits.

Vendors interested in exhibiting at the show are invited to contact Nick Langdon, SAC Expo Vendor Coordinator, (916) 723-6425.

Creative Solutions

Part 5

By Steve Kiepe

Atari computer owners are a strange group. Frequently sheepish about the fact that our computer choice is "out of sync" with the rest of the computing world, we are nonetheless proud of avoiding the pack mentality, staunch in our refusal to acknowledge computing reality's harsh impingement on our daily lives. On the other hand, we tend to be a fatalistic crowd, with a mindset like those of the defenders of the Alamo, surrounded by the legions of the MS DOS armies of Generalissimo Santa Ana. Many believers continue to hold out against these overwhelming odds, determined to give no quarter, but defectors are not uncommon. Into the midst of this conflict there occasionally stumbles a real wild card; seemingly rational business entrepreneurs who truly believe in Atari computers. We've studied a few such hearty souls in the previous installments, and once again, it's time to strike out in search of . . . The Profitable Atarian!

Just a short time ago, I received a letter from an enthusiastic Atarian seeking to share his company's story with kindred souls of the Atari business community. Jose Arizmendi, head Atari revivalist and guru for Metalfab of Los Angeles, had managed to convert his boss and co-workers to the Atari cult. In 1986 Jose became a new owner of an Atari 520 ST. Soon thereafter, Mac Turner, Jose's boss and the owner of Metalfab, approached Jose about finding a computer to track inventory and handle accounting chores. Jose managed to convince him to give Atari a try. From a single machine initial investment (the skeptical Mac wasn't too sure about buying "toy computers"), Metalfab's Atari computer collection soon filled every niche of its business needs.

Metalfab makes sheet metal components for the residential building trade including florescent light fixtures, bathroom fixtures, louvers and vents, foundation access doors, and similar products. They also make commercial animal feeders for rabbits, poultry, and other such creatures.

A Complete Solution

Today, Metalfab operates two 1040 STe's, three Mega ST/STe's, and a TT. They are all networked using Lantech cartridges, through the LAN and MIDI ports. Both of the 1040's are used as floor machines, with bar code readers attached, that track the progress of production orders. The company uses its computers to place order entries, provide price estimation, collect data on labor costs for each job, monitor the status of work in progress, design components and subassemblies, track inventory, handle accounting,

METALFAB

Atari Computers Provide a Complete Solution

produce correspondence, and much more. In short, everything that requires a computer to conduct the company's 2.6 million dollars a year business is done on Atari computers.

Jose isn't a programmer, just an ordinary Atari user who slowly expanded the utility of his company's computers as a hobby. He started out by modifying *Superbase* to track component inventories. From the baseline forms, which are included with that program, he expanded his Atari fluency by authoring specialized programs such as HP Deskjet printer utilities, HP Laserjet drivers, and a calculator program that determined the best means of shearing sheet metal for each project while leaving minimal waste material.

Superbase for Fundamentals

Over time, the users transferred work that was formerly done by hand to the computer. The simplicity in making *Superbase* field changes meant that it was easy to determine differing price markups depending on component originator and use. This greatly improved both the accuracy and ease of determining the most appropriate price estimates for new component manufacturing. Ultimately, *Superbase* was used to not only do price quotations but also do order entries, costing, invoicing, monitor job status, maintain inventory, etc.; in short, nearly everything a very expensive Manufacturing Resource Planning system would be expected to do and much more as well.

Dynacadd made an appearance at Metalfab soon thereafter. All component and subcomponent design is done with *Dynacadd*, much to the amazement of Metalfab's customers. Coupled to a Roland C size plotter, they achieve superior results in their component design even when compared to that produced by other shops using mini computer systems.

Integrated Specification/Database System

One unique aspect of Metalfab's system is the "traveller" function. As each order is received, it enters the design, fabrication, and tracking system. Each item has a master assembly file that outlines all components used to make up the finished piece. Each component and subcomponent design is readily available from the computer on the floor where fabrication is conducted. Each component is shown with the part number, customer, number of subcomponents necessary, graphic description, desired shearing instructions, and all operations required to make the part. Each ordered item could have 10 to 15 of these shop "trav-

(Continued on page 21.)

Goodbye!



This is my final column as ST Editor for *Current Notes* magazine. Although it has been a short nine months since I assumed the role of Editor, career "decisions" have arisen which preclude my ability to fulfill the duties of the editor. As part of the Department of Defense draw down, the Navy has reduced the number of operational helicopter squadrons. My next duty station, to commence in February of 1994, was to serve as Executive Officer (XO) and ultimately Commanding Officer (CO) of one of the squadrons. The downsizing of the Navy has, however, resulted in a temporary "excess" of prospective Commanding Officers and hence my "slot" has been slid further down the pike. I now expect to start the XO/CO cycle in August of 1994 and will likely fill the "dead time" with short deployments for training and numerous schools en route. The career and home port stability, which had been forecast just a few short months ago, has subsequently disappeared. Even as I write this, my family is already on the road to the west coast and I will be en route from Rhode Island to California in less than 24 hours. My Atari computer is in boxes (I'm typing this on a Macintosh Powerbook) and access to my desktop Atari will be limited in the future. As I am rapidly becoming a "transient," it would be difficult for me to continue to fulfill my responsibilities to *Current Notes*. Hence, I am cutting myself free to concentrate on those items most important to my professional and personal future, vice to the computer to which I have grown accustomed.

I've had an interesting nine months observing the Atari scene from the dual perspective of owner/user and commentator. These are, in my opinion, exciting times for Atari, but not necessarily for Atari computer owners. The Jaguar is poised to take the gaming world by storm and, judging from the stellar performance curve of Atari's stock in the last few months, Atari is holding onto the tail of one incredibly hot tiger. This bodes very well for Atari stockholders and, in my opinion, is the kind of approach responsible management should take toward Atari's future, at least from a corporate profitability perspective.

However, I absolutely believe that Atari as a personal computer builder must take a long hiatus from the market. Unless Atari finds a way to bridge the gap between its products and the rest of the market, it has little hope of gaining the headway necessary to succeed in that arena. On the other hand, the company may be poised to enter a new market oriented toward home users if, as time goes on, it finds a way to blur the distinction between game machines and computers intended for the home market. This will require an extensive user base, solid developer support and

capable software, and an intensive, directed marketing strategy aimed, not at breaking into the business community, but rather at grabbing the prospectively lucrative, but still untapped, home market.

Atari products certainly lend themselves to such a strategy, *but* to be effective, there must be a solid basis in terms of third party developers and an established user base. Whether either of these objectives can be achieved by Atari's management is yet to be determined, although past actions don't generate optimism. My prediction is that Atari will return to preeminence as a game manufacturer but that its days as a dedicated computer maker are over.

Profits Galore

It is remarkable to note how profoundly Wall Street and industry have responded to Atari's return to the game market. Atari's stock, as of 5 November 1993, was at 11 and 3/8 dollars per share, up over 1100 percent in less than a year! With no product yet released (although we are within days of the Jaguar's early market roll-out) the optimism regarding Atari's future is amazing, especially for a company that many predicted would go belly up by now. Atari has found its vital niche, has chosen a marketing strategy accordingly and, lacking any unforeseen complications, has nowhere to go but up. I wish (boy do I wish) that I had listened to my "risk taking" side and bought 1000 Atari stock shares in January; I've had phone calls from several very happy folks owning upward of 4000 shares apiece (bought for less than \$1.00 per share) who are convinced that the Tramiels are the greatest businessmen on the face of the earth. I'm jealous (very) but my own shortsightedness caused me to focus only on Atari computer products. I never conceived the possibility that Atari could come up with a product with as much promise as the Jaguar, especially after failing to properly market the Lynx. While I won't discount the possibility that corporate management could blow this one too, it seems unlikely. Atari is poised to take the gaming world by storm in spite of itself. In this one area, name recognition is squarely on Atari's side.

Thank You

I'd like to take this opportunity to thank *Current Notes'* publisher, Joe Waters, for the opportunity to give the editor job a try. I enjoyed the challenge of coordinating reviews, gathering news, and even getting developers to answer the phone when I called (the ST Editor moniker did wonders for generating callbacks). I have been greatly impressed with the skills, sincerity, and dedication of many of the Atari third party developers and, on many occasions, often

amazed, amused or abashed by the frequently cannibalistic infighting between the members of our dwindling developer base. It reflects well on our developers that they continue to put their best efforts into bringing Atari users very viable, timely products in spite of the limited user base and, therefore, the limited profit potential. It is unfortunate that so many of them have dropped by the wayside, but we will see them again, probably developing for a computer that we may move to in the future. Thank you, folks, for some exceptional values in hardware and software. You made my Atari system a valuable asset that outlasted the "imminent demise" predictions of many gainsayers for the past several years. Hope to see your products in the Mac world soon.

The Tribulations of a Platform Change

Having worked with my Powerbook for almost two months now, I still much prefer my Atari but, lacking any product to buy, there isn't much choice for us mobile users. The lack of Atari product to meet the needs of serious computer users (and many novices) is the second most commonly heard complaint about being an ST owner—after the lack of compatibility and immediately before third party support. As none of these three areas are likely to be addressed in the near future, and because I'm being forced to cut my ties to a fixed home base for many months, Atari has been precluded from my near term future.

Sadly, this means I must forgo having those programs I felt most comfortable with, two of which I'm convinced are

better than any peer on any other platform; *Pagestream* and *STraight FAX!* I have yet to find equivalents for these two, but I hold out hope that they will make their way into larger markets. On the other hand, there are some outstanding products for other platforms; the new *WordPerfect 3.0/6.0* is exceptional, and my kids love the *Carmen San Diego* series. Overall, it has been a painful, costly, and somewhat unsatisfactory transition for me, but there is life after Atari and I am dedicated to finding it.

In this issue, you will find another installment of the Creative Solutions series. As I've noted in the past, there are a lot of very sharp, resourceful folks out there milking every bit of utility from their chosen computer platforms. There are major national banks, small businesses, doctor's offices, balloon salesmen, bedding retailers and many more folks who rely on their Atari computers on a daily basis. These folks have found a way to make their computers work for them. I hope to continue to be able to bring this information to you; maybe somewhere in this series is the information you need to get the best possible use from your computer.

[Note: Steve called from California to say he had arrived just fine. However, because of an unfortunate mixup, several weeks of mail that had been waiting for him was thrown out by the cleaners. So, if anyone has mailed Steve material at his California address (12003 Deerfoot Rd, San Diego, CA 92131) in November, please check to see if he actually received it. —JW]

CREATIVE SOLUTIONS

(Continued from page 19.)

ellers" defined in this manner. In short, the traveller is a combination design specification file base maintained in an independent, yet relational, database management system.

The Metalfab setup doesn't stop there, however. Jose used a Deka adapter to add an IBM keyboard to the 1040 ST's. The Deka adapter has provisions for installation of a Bar Code reader. The two floor units have these bar code readers, which greatly reduce input errors while increasing the speed of data entry. By using bar codes generated by another Atari computer through an HP Laserjet 4 printer and intelligent bar code interface card, Metalfab was able to create custom identification labels for each subcomponent, allowing for the efficient use of the bar code readers. Fed into the master data base via bar code entry, the progress of every operation is carefully and easily monitored and cost of production generated.

Programs to Fill All Needs

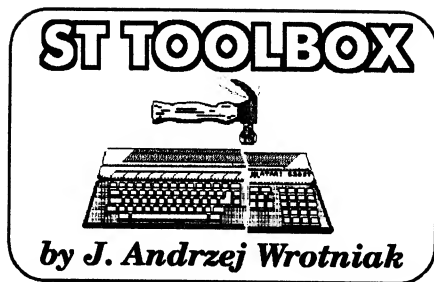
Metalfab has some other program favorites which they use to meet their remaining business needs. They use *Caligrapher Gold 3* for their word processing needs and daily correspondence. *LDW Power* is used to run daily cash projections. *PageStream* provides finished high quality pub-

lished output for advertisement, correspondence, etc. *Stalk the Market* tracks the financial markets of greatest interest to Metalfab and *STraight FAX!* meets the company's fax needs.

Teaching Through Poker?

Metalfab's 56 employees love the Atari. Metalfab bought their computers to be subservient to the users' needs, not the other way around. They focused on helping their employees become comfortable with their computers by letting them play poker, thus gaining practice using Atari's interface. Even Mac Turner, an eternal skeptic, became a hard-core believer in Atari computers. The first new Falcon ordered for the business appears predestined for Mac's home! Metalfab will have to buy a few more Falcon's if they want any to stay in the shop!

Metalfab is not concerned about the possible impact of the shrinking Atari user base. The company has enough systems to meet their needs for a long time to come. Further, they have tremendous dealer support from their local retailer, Mid Cities Computers. For Metalfab, Atari is a machine that has demonstrated "power without the price." For Jose and his merry band of converts, there has been no looking back. Metalfab's experiences provide a lesson for the rest of us: the only limit to the use of our computers is our own imagination.



The Pleasures of the Ripe Age *Geneva*

A Major Breakthrough or a Conversation Item?

It is somewhat sad, but difficult to avoid, that some of the best things for a computer system show up when its life span nears an end. Remember the 8-bit Atari's? Just when it became hopelessly obsolete, just before the manufacturer pulled the plug on this line, we saw some really good OS versions and extensions (including *Geos*, a very nice windowed user interface and application environment, amazing on an 8-bit machine!), some good hardware add-ons, and some amazingly competent software.

(Yeah, yeah, I'm going to get those dozens of letters saying that the 8-bit line is alive and well. Wake up, smell the coffee: for many people the little cute machine can still do much of what they need, but both the hardware and the software are now hopelessly outdated, with the support and availability of new goodies very, very low.)

Now the ST users are facing, I am afraid to admit, a similar situation. Eight years after the ST line was introduced, we can see some very exciting developments. They are quite few and far apart, but enough to keep us excited.

Luckily, the ST line has not been abandoned by Atari. The new Falcon line does not break any new barriers as a productivity machine. It seems to be selling quite nicely in the music market, but most of the home users seem to have adopted a wait-and-see attitude. There are no sales figures available from Atari, but judging from a very cautious approach from software developers ("the size of the Falcon market does not justify..." etc.), we won't see a rush of everyone and his mother to write new, wonderful productivity software taking advantage of the Falcon capabilities (including the new AES).

Except for a few new programs, the most I could see were small improvements to the existing (and still supported) software, making it compatible with the Falcon so that it simply runs on that computer (and shows three-dimensional buttons, what a thrill!). Most of the Atari users still run the ST/STe line, and those who write commercial software are well aware of the fact.

Even the ST/STe market is shrinking. It is impossible to get exact figures, but magazine subscriptions, software sales, number of dealers—all this leaves no

doubt what is happening. The positive feedback pattern: fewer computers—less software—even fewer computers—even less software, is at work here, nibbling at our ranks. Luckily, with the Falcon music market niche, this is a relatively slow process—but it is here!

This is why any developer's efforts to bring new and non-trivial software to our market deserves our appreciation and attention. These people are not in the Atari field for money—those who were are now writing third-class software for the PC clones, supporting themselves quite nicely (some became national park rangers and are happier than ever).

Geneva—a Major Event in the ST Field

Gribnif Software from Massachusetts has been with us for a while, and they became quite a force in the ST software field. Their products range from good to excellent—anything they bring to our market deserves a close look, especially the programs developed inside the company.

Their first and, I think, most important, product is *NeoDesk*, well designed and cleanly implemented, reliable and good-looking, a clear must for every ST user. Even the newest GEM desktop, introduced with the Falcon, does not match the functionality and convenience of *NeoDesk*.

Now they came up with a similar, but potentially even more significant product: *Geneva*—a multitasking environment for the whole ST line—yes, it works with even the oldest STs (provided you have enough memory and, preferably, a hard drive). This is as if Microsoft came up with *Windows* working under PC-DOS 3.0 on the old PC/XT line!

Let me quote the very first sentence from the manual:

"Geneva represents the most significant advance in Atari computing since the introduction of the first ST in 1985."

Sounds short and sweet, strong and not too modest (who am I to cast the first stone?), but it looks like this opening statement may be true! With a few reservations, given some gradual improvement, time and market acceptance, one day we may think of our Atari experience as "before and after *Geneva*."

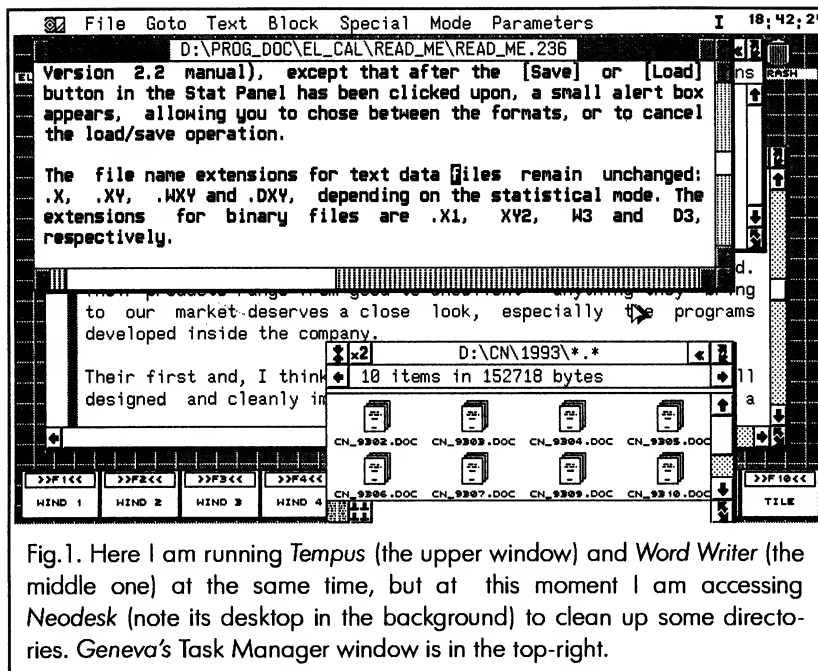


Fig.1. Here I am running *Tempus* (the upper window) and *Word Writer* (the middle one) at the same time, but at this moment I am accessing *Neodesk* (note its desktop in the background) to clean up some directories. *Geneva's* Task Manager window is in the top-right.

This is not a review of *Geneva*—I am sharing with you just the first impressions, gained in three weeks of using it, playing with it, tweaking it, loving it and having my doubts, too. It will be incomplete, it may have some factual errors (for which I beg both the readers' and developer's forgiveness), but it should give you an idea. I am going to write a more complete (and, hopefully, accurate) review for the February or March issue, after my experience becomes more extensive; but I have to write this preview, as a development so important deserves a quick reaction. Here it is.

What the Heck is *Geneva*?

First of all, it is a multitasking program environment, very much like Windows in the PC clone world. It allows you to run more than one program at a time.

Some of the programs will politely share the screen with others: windows belonging to different applications will be visible at the same time and you can switch between these applications by just clicking on one of the windows. Very convenient.

Other programs do not fit well into a multitasking environment. You can still run them: *Geneva* will suspend all others, giving the current program control over the screen. Still, you can switch from such an application to another—the current one will be just temporarily suspended; almost as convenient as the previous case.

Finally, some programs will refuse to run properly under *Geneva* at all. This is difficult to avoid: much software has been written when nobody was expecting multitasking on the ST (there are also some other reasons, which I will discuss later). This is not a disqualifying factor, as unpleasant as it may be, as you can always reboot in a single-tasking mode (easy, if you are using a boot manager, like *SuperBoot* or Gribnif's own *XBoot III*, which I recommend very highly in either case).

I will come back to compatibility issues later, now about other features.

Non-GEM programs can be run now in windows, possibly in the multitasking mode—they no longer have to take over the entire screen. Sometimes this is very convenient.

Geneva also allows you to use more than the usual six desktop accessories at one time; it also lets you install and de-install them on the fly, or run as usual stand-alone applications.

In addition to these program-juggling capabilities, *Geneva* also contains a replacement for the Atari AES (Application Environment Services), the part of GEM that handles the user interface: windows, alerts, dialog boxes, menus and more. This replacement has some enhancements. Some of these are quite important (for example: more than seven windows are now available to be shared between applications); some, cosmetic (like three-dimensional or rounded buttons, or window scroll bars of adjustable width).

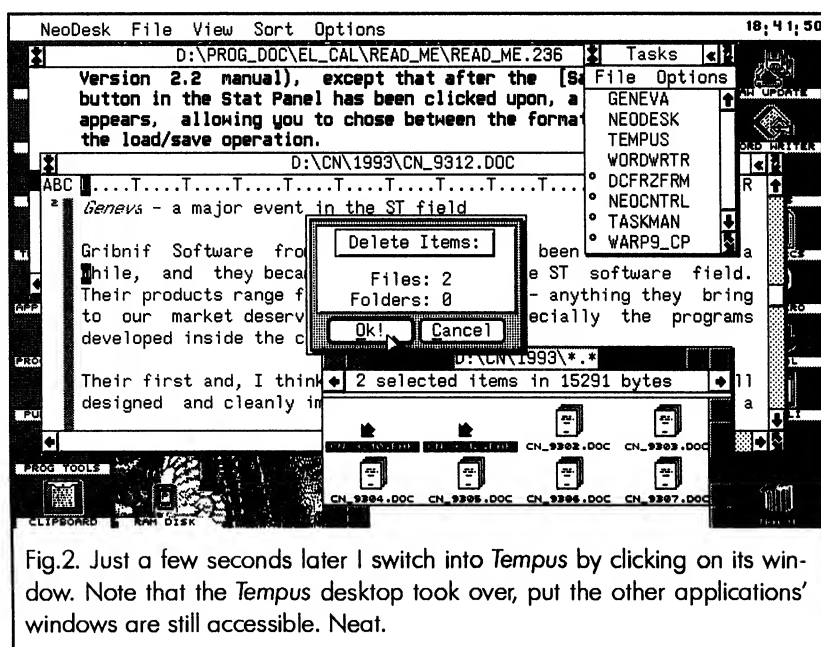
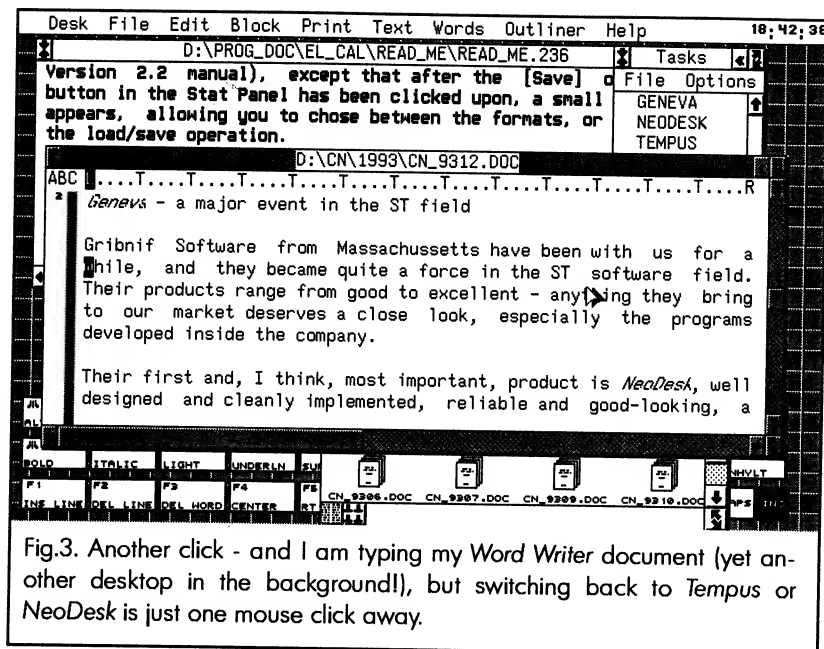


Fig.2. Just a few seconds later I switch into *Tempus* by clicking on its window. Note that the *Tempus* desktop took over, but the other applications' windows are still accessible. Neat.



There is also a group of AES enhancements offering additional functionality, but only with programs written with *Geneva* in mind.

Does It Work?

This is not a very good question to ask. A program like *Geneva* is not a self-contained entity, with some system resources at its disposal and having to co-operate at most with the computer's operating system. *Geneva* is an operating system (or at least a part of it) and it has not only to coexist peacefully with hundreds, maybe thousands, of various programs available for the ST, a number of them at a time, but also to provide them with OS services they expect and to direct **their** peaceful coexistence.

Now, take into account the fact that all programs we have on the market at this time do not know anything about *Geneva*—most of them have been written to be run in a single-tasking mode.

Therefore, if a given application starts misbehaving when used under *Geneva*, there may be a number of possible reasons:

- (1) *Geneva* does something wrong.
- (2) Our application violates some TOS programming rules (and this violation was not critical in single-tasking mode but now it comes out).
- (3) Some other program being present in the system at the same time violates those rules and messes up our application (ditto).
- (4) Satan is at work and computers are no good for anything, anyway.

In my brief experience with *Geneva* I found that about 30% of the programs I've tried have problems. Most of them fall into Category (2) or (3), but in a few instances, I have a strong suspicion of (1); I have also one or two clear cases of (4).

Is this a good result or a bad one? It depends how you look at it, but after my previous brief encounter with *MultiTOS* (to say nothing about the original early *Microsoft Windows*), I find this result quite impressive.

First of all, in about half of the cases, the problem-causing program could be persuaded into a proper way of behaving by informing *Geneva's* Task Manager to run it in a single-tasking mode and/or by the proper setting of some other switches. This information can be written into a configuration file,

and from that moment on *Geneva* will always run this application in the proper way. (Included screen snapshot may give you some idea about the range of adjustable options.)

The remaining 15% of misbehaving programs could not be persuaded by any means. The types of problems were very different: windows going crazy, dialog boxes with editable fields not showing the typed-in input, crashes on exiting the program, and more. One of the most mysterious things was the memory leakage I have experienced with three applications (including my own *El_Cal*, but, to make things even funnier, in some versions only!): the amount of memory available to the system after an exit from an application is a few hundred kilobytes less than it was before before running it.

Luckily, you do not have to reconfigure your system entirely to *Geneva*. With use of a boot manager (have I already mentioned *XBoot III*?), you may decide upon booting up, whether a given session has to proceed under *Geneva* or in the plain old single-tasking mode.

So, the answer to our wrongly-stated question is: yes, *Geneva* works with most of the applications I've tried, and those with which it doesn't can be still run the old way (although having to reboot your machine is a drag).

Should You Get It?

The answer depends. First of all, although the (well-written) manual suggests that *Geneva* can be used with just one megabyte of memory, I don't think it would be very useful if limited to that amount of RAM. Since it does not swap the memory to and from

disk (and I'm quite happy it doesn't), all concurrently run applications have to fit into the available RAM. With two MBytes the situation is much better, and if you have a four MByte machine, *Geneva* should make you very happy.

Two: a hard drive is definitely a plus (but then, it always is). All *Geneva* files take about 300k of disk space, so this will not be a problem.

Three: the program is very well thought-of. Those of you who might be afraid of multitasking ("Why should I complicate my life? My ST does all I want!") should fear no longer. *Geneva's* installation is very simple (and well documented), and its operation very intuitive. It has a nice on-line help, with hyperlinks allowing you to jump between relevant subjects; but you may not even need it (I've used it for the first time only now—there was just no need!). Definitely, you do not have to be a techie in order to use *Geneva*!

Four: the convenience of switching between applications with a single click of a mouse, and (for those who actually multitask) of viewing their windows simultaneously, is something you have to experience to appreciate.

Five: in spite of being a new product (I'm using Version 1.01), *Geneva* makes a solid impression. Very much like the first version of *NeoDesk* (programmed by the same Dan Wilga, whom I consider the cleanest programmer in the ST market), with a few warts, it is already a nicely behaved and useful program. Since Gribnif's record of user support and product improvement is very good, *Geneva* can (and will) only get better; but I like it already.

Six: just watch your friends who use *Windows*, when you tell them you are running this thing on an 8 MHz machine from eight years ago! (Don't forget to mention that all it needs is 300k on your disk; this will make them depressed for the rest of the week!)

The bottom line? If you have two megabytes or more of memory and if you use your ST for more than playing games, then *Geneva* is more than worth a serious consideration. If you have just one MB or less, you should consider a memory upgrade. If not, ask for a demonstration of your two favorite applications on a one MB machine under *Geneva* and then decide for yourself.

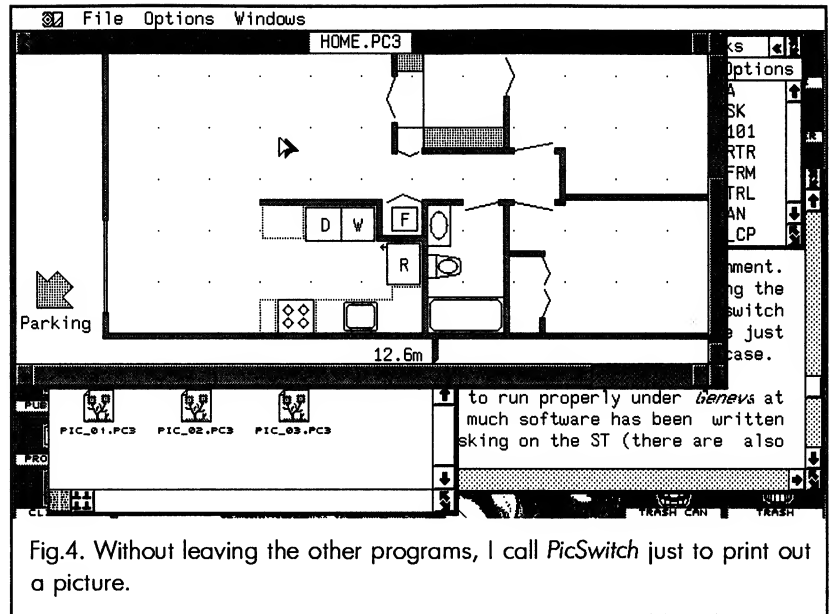


Fig.4. Without leaving the other programs, I call PicSwitch just to print out a picture.

To say anything more definite (in either direction), I will have to wait until I gain more experience with *Geneva*—just in time for the promised review.

You are not risking much: *Geneva* is priced more than reasonably (street price of about \$60). Myself, I'm glad I bought it, and I hope Gribnif will sell lots of them.

Does Geneva Have a Future?

This may be a good question, but it is very difficult to answer. Just look around: what is the most dominant operating system in microcomputers? What is the best-selling word processor?

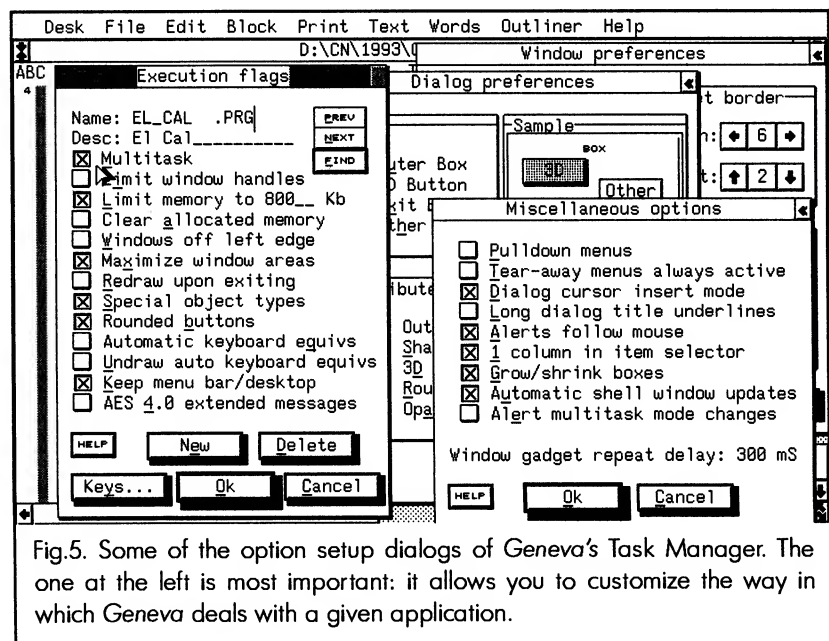


Fig.5. Some of the option setup dialogs of Geneva's Task Manager. The one at the left is most important: it allows you to customize the way in which Geneva deals with a given application.

Geneva has the potential of changing the way in which Atari computers are used (to a much greater extent than *MultiTOS* does).

Unfortunately, ours is a very small and shrinking market. For *Geneva* to become a standard on the ST/Falcon line, it has to co-operate smoothly not with 70% or 85% of available ST software, but with 99% or so. Many of us keep our STs mostly because of our past investment in software. If this software misbehaves (regardless of who is to blame!) under *Geneva*, switching to the latter becomes less attractive.

Much of this software has been written by programmers who have since moved on to Bigger, Bluer pastures. They will not come back to make their programs work fine in multitasking. Even many of those who still are supporting their ST programs may decide that the effort may not be economically justified. This may be even more true with regard to using the AES extensions offered by *Geneva* but not present in the "official" TOS (especially the most common, older versions).

All this means that the burden of assuring *Geneva's* compatibility with a greater share of existing (and possibly future) ST software will be mostly on Gribnif's shoulders (this means Dan Wilga's, with whom I won't trade jobs!).

Of course, the logical thing would be for Atari to license *Geneva* and to bundle it with the Falcon (the same thing they should have done with *NeoDesk* and *Universal Item Selector*). But then, should we expect something *logical* from the maker of our favorite computer? Come on!

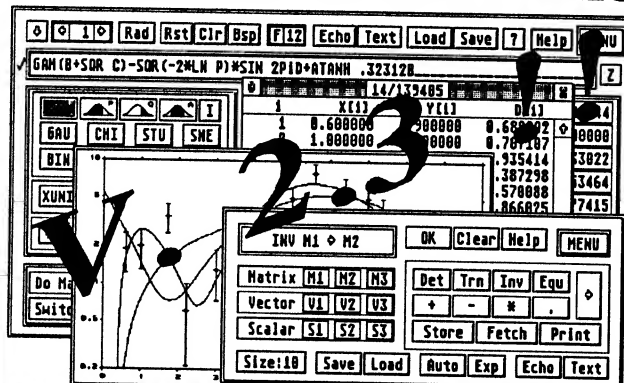
A Goodbye to a Friend

I am going to miss Frank, whose sudden departure saddened so much our small Atari user community. For many years we used to share these pages, and to meet at the famous monthly Editor's Luncheons at his table, with Frank entertaining us with the last Atari (and not only) gossip, and offering us the food he cooked himself.

The last time I saw Frank Sommers, just a week before his passing away, was in his study, filled to the ceiling with all imaginable computer gadgets. We were installing the *Gemulator* on his PC clone, and he was planning to write a layman's review of it (to counter mine, which he thought was too enthusiastic). We had a beer, and a quick hot dog over the keyboard. If I only knew it was the last time, I would have appreciated Frank's companionship that day even more.

It is all of us who lost a friend.

EI Cal The Math Machine

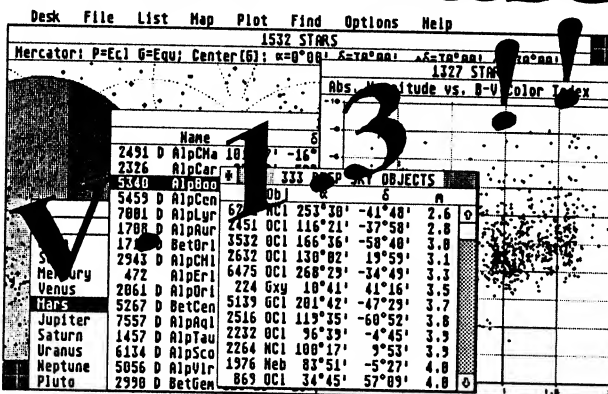


From senior high to Fermilab - if you do any engineering or scientific calculations, then you need this program.

- * Numerical integration, differentiation
- * Systems of linear, non-linear and differential equations
- * Vector and matrix operations
- * Multi-dimensional function optimization
- * Mean, standard deviation
- * Function and data plots
- * Linear regression, correlation
- * Polynomial least squares
- * Multi-parameter point and histogram fits
- * Unit conversion
- * Roots of square, cubic, quartic equations

Version 2.3 plots in color, runs in the new Falcon resolutions (also in TT High and Medium). \$63.

Star Base



- * 9000+ brightest stars
- * 300 deep sky objects
- * Planets, comets, Sun and Moon
- * Various projections, reference frames and map ranges
- * Choice of observer's location and time
- * Mapping, browsing, database manipulation
- * Object search, selection and identification
- * Hertzsprung-Russell diagram
- * Planet and comet path plotting

Version 1.3 uses color for maps, works in Falcon resolutions (also in TT High and Medium). \$43.

Min Cal Big Sky

EI Cal's little brother: a scientific calculator accessory, with the same expression parser and the most powerful function set on the market (95 total). \$15.

An extra data base with 40,000+ stars and 4,000 deep sky objects. For Star Base 1.1 or higher. Hard drive recommended. \$22.

All programs run on any Atari ST, Mega, ST^e, TT or Falcon, color or monochrome (Gemulator/VGA OK, too). All need 1 MByte of RAM. Prices as shown include shipping. When ordering two products, deduct \$6, and \$4 for each next. Outside continental US please add \$5. Updates: first one free, then \$5 each. Upgrades to EI Cal 2.3 from 1.xx: \$20

Send a check (\$US on a US bank) or money order to Debonair Software, P.O.B. 521166, SLC, UT 84152-1166

GRIBNIF SOFTWARE'S

Geneva

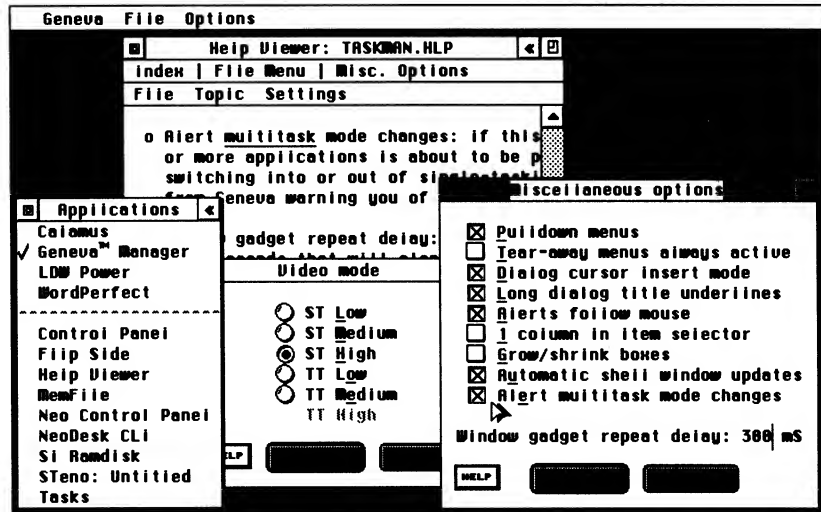
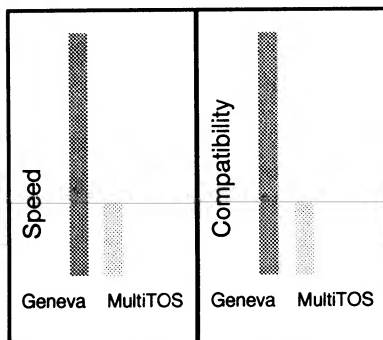
Multitasking Application Environment

GENEVA is a complete multitasking application environment for the Atari ST, STE, TT/030, and Falcon030.

Features:

- Multitask unlimited GEM applications at once.[†]
- Load and unload unlimited desk accessories at any time.[†]
- Open up to 256 windows.
- 3-dimensional buttons and window gadgets.
- Keyboard equivalents for all dialog boxes, window gadgets, and drop-down menus.
- Resize windows in any direction.
- Manipulate, resize, or move windows in the background.
- Tear-off any drop-down menu into its own window.
- Supports custom and animated mouse pointers.
- Run multiple TOS programs, each in its own GEM window.
- Special support for singletasking applications.
- Extensive built-in, context sensitive (hypertext), online help.

[†] LIMITED BY AVAILABLE MEMORY.



Previously, the Atari was only able to load and run one program at a time, and was only capable of using six desk accessories, without being forced to restart the computer.

Based on the concept of "cooperative multitasking" that the GEM environment was originally designed on, which is similar to what Macintosh and Windows users are already familiar with, GENEVA brings to the Atari a complete, easy to use, multitasking environment.

Unlike other Atari multitasking environments, GENEVA runs at the full speed of your computer without any significant speed loss. It can also run just about all your older applications, many of which do not work in other multitasking environments.

GENEVA's new look includes 3-dimensional buttons, gadgets, and scroll bars, similar to those found in Microsoft Windows and on the Apple Macintosh. Of course, this can all be customized.

GENEVA also comes with an easy to read, illustrated manual. It covers everything you need to know, including hints and tips on how to get the most out of GENEVA.

The included Task Manager sets all of GENEVA's options and allows for the setting of GENEVA's unique "program flags", designed to let GENEVA know how to run most existing programs, even those not designed to run in a multitasking environment.

GENEVA is \$69.95. Requires less than 200K of memory, however 2 megs or more are recommended. A desktop is not included or required, though we recommend NeoDesk 4.

To place an order, or for more information, contact:

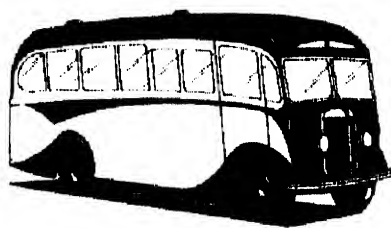
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Riding the Bus

(C) 1993 David C. Troy

I suppose it was about a year ago that I bought my first real Intel-based computer. It was a 50MHz 486DX system, with 16-bit card slots (you'll hear these referred to as AT or ISA card slots) and no hard drive. I bought the machine pretty much exclusively for the purposes of experimentation, and quite frankly, I didn't know very much about contemporary IBM-compatible hardware then. But there it was. You have to start somewhere, right?

So I put *Windows* onto it, installed a CD-ROM drive, put the *Corel Draw* package on, and messed with an EPROM burner a friend loaned me. The machine, having a 50MHz CPU and even a 50MHz memory bus was pretty quick, but it still was astoundingly slow for screen redraws and disk access. The video card was not a real slouch, either. It was a 1MB, 16-bit video card—the current “standard,” which allowed you to go to 1024 x 768 non-interlaced. Well, let me tell you, with that kind of resolution and 256 colors (8-bit planes, so 1 byte per pixel), you were talking about some seriously pokey screen redraws.

This was a **major** complaint. When you're using *Windows* and graphics packages like *Corel Draw*, you can't afford to watch each pixel be drawn individually. It's just too slow.

So the machine sat in the back of the store for about six months, with its cover ripped off, random cards strewn nearby, surrounded by EPROMS. (“Hey Jenn, let's see what's in this one ...”) We actually found that in the ROM for an old 8-bit Atari disk drive, some clever rogue had imbedded the words, “HI MOM!” It's a lot of fun to be paging through screens of machine code and then come to some little Easter egg like that. Jennifer got bored after the third one though ... The machine got a little lonely after a while, because using it made me feel kind of numb. I was really accustomed to TT030 screen redraws, which are quick, even at high resolution (using Crazy Dots). So, it languished for a while.

I have written before about my point of sale program that we use here. As I have said, it's written in *dBMAN*, and we had been using it on a Mega ST 2 with an SST board until about April of this year. Well, we liked the system a lot, but we wanted a version that was networkable. Trying to run a business where

multiple people really did need to use the computer at one time was starting to get taxing. (I can't think how many times there was a line to use the computer ...) So anyway, I had put the task off about as long as I was able and it was about time to DO something about it.

My first reaction was to try to do it on the Atari, but as I have said before, the sheer quantity of data that would have to be transmitted over the network wires would necessitate a very fast network, something faster than what was available for the ST at that time. So we decided that Ethernet would be the best bet. It has a best-case transfer rate of about 1MB per second. PC's seemed like the most economical way to go (we had a few Atari 386SX machines left in stock), and we put them to use.

So, I spent most of last spring (March and April) porting the program over to the PC's and getting the network software functional, and the 50MHz computer started to get a real workout. I had started out using *Lantastic* as the networking software, but later found that *Windows for Workgroups* is a tighter, more functional (albeit slightly slower) network operating system. Some of you are probably total network gurus and are laughing because I'm not using *Novell*. But it's just not what I needed, folks.

Anyway, in doing all of that, I became fully acquainted with the “joys” of MS-DOS 6 (it's up to 6.2 now), *Windows for Workgroups*, incompatible hard disk controller cards, and more. Out of necessity, I became more familiar with PC hardware, and will share some of my revelations with you now.

First, it became clear to me that my 50MHz machine, while a fast machine for doing CPU tests, was not the kind of across-the-board wonderdog that I really wanted. The 16-bit card slots *really* slow things down. Here's why.

The ISA (Industry Standard Architecture) bus, the bus that 16-bit AT card slots live on, is defined to be **EXTREMELY** compatible across the board, and thus has some limitations. Consider how it would be possible for such a wide array of cards to be fully compatible on a wide range of computers. Computers with 286 processors, 386 processors, 486 processors—even some Intel-incompatible boards can use ISA cards.

The only way that this could work is if we use what I'll call "LCD" technology. That stands for Lowest Common Denominator.

What does LCD technology entail here? Well, it means that the cards will run no faster than the slowest of all "AT" style computers. That's 8MHz. It also means that you're limited to a bandwidth (think of this as the number of lanes on a highway) of 16-bits. Then you have the overhead of the card just being on the bus at all. There is some loss of speed in getting the data onto and off of the bus, and in figuring out the card the data belongs to. So what you have is a kind of public transportation system that consists of one minivan driving around in circles picking up some passenger bytes from one place and dropping them off at another.

So gee, even though my 486DX 50MHz machine has a 32-bit bus for accessing memory, it still is limited to 8-MHz and 16-bits when it comes time for it to communicate with the video card, the hard disk, the floppy drive, or anything else I want to add to it. That kinda rots, huh?

If you accept the precept that the display on your monitor is produced by a set of varied analog voltages that are, in turn, produced by chips that convert data stored in RAM, one datum at a time, into these voltages, then you'll begin to see a dilemma that arises when you start talking about video cards on a PC.

Which Side of the Fence?

You hear talk about video RAM and, of course, you know about conventional RAM. On the ST, the video RAM is part of the conventional RAM, and thus the processor can directly access the video RAM. Let me say that again: On the ST, the processor can directly access the video RAM. This means that when an ST program wants to draw a box on the screen, it figures out its corners and starts to "paint" all the video memory inside them. Because the video display is being refreshed as frequently as 70 times per second, the screen changes as soon as the video RAM changes.

On a PC (and on a color Mac), depending on the sophistication of the video card, the process is a little different. The CPU and the video card DO NOT share the same RAM (which is why you hear about 512K, 1MB, and 2MB video cards). The system must assert an interrupt, to let the video card know that it's being talked to. The CPU is then ready to write to the RAM in the video card, but to do so, the data must be knocked down to the 16-bit bus-width, and it can only send data at 8MHz. So you can see that this process requires a bit more overhead, and it's the reason why moving a window with a conventional ISA video card, even on the fastest of CPUs, is about as quick and exciting as watching paint dry, one molecule at a time.

There are ways to make this process go faster, and companies such as ATI have done this with their series of 16-bit ISA Windows accelerator cards. These work by actually giving the video card a more sophisticated processor of its own that can understand a limited set of "commands" to draw graphics primitives, like boxes, circles, and lines, and can probably do blitting (copying of video-RAM data from one place to another in RAM, which if done quickly can produce smooth animation in games, etc). They then write a device driver for Windows which, instead of trying to write every little piece of screen data itself, putting it through the incredible bottleneck of the ISA bus, issues graphics "commands" that the card can understand. The graphics card's processor then interprets these commands and writes to the video RAM itself, while the CPU has gone on to do other things. Obviously, this is faster.

This technique for video cards is analogous to PostScript for laser printers. Rather than send bulky bitmaps over low-bandwidth cabling (parallel and serial), why not just give the printer some brains of its own and just TELL it to draw a page. This is a very sound approach to overcoming the bottleneck of a slow interface, and it works as well for video cards as it does for printers.

But gee, doing this doesn't really get you any real additional power. It's in many ways a stopgap measure that will allow you to get around a limitation, but it doesn't cure the limitation. Plus, it causes your graphics card (or printer) to be woefully expensive (because of its extra brains) and you don't even get to use the extra brains for anything else other than their specific, intended purpose.

Widening the Highway

Obviously, the solution to this problem is to begin to develop machines with greater bus bandwidth. Bring it up to 32-bits and start going at 25 and 33MHz and you start to get some real power. But doing this in a traditional PC architecture starts to bring up some nightmares.

When you start going with a faster bus, you start giving off more radio frequency noise, and gee, the FCC is making things really difficult for people that make noisy motherboards. (Look at Atari.) You also begin to get more incompatibilities between chipsets, and timing becomes much more critical. The 8MHz ISA bus was great because it was cheap, had absolutely no headaches involved with radiation, and timing was not too important. The ISA bus is akin to a lazy, Caribbean island, where everything goes *real slow* and nobody worries too much.

To help to defuse problems that would arise when going at higher speeds, new standards were developed to specifically define these faster buses. EISA (Ex-

tended Industry Standard Architecture) is one standard that is particularly popular for larger machines like file servers and workstations. It is supposed to be very fast, although I have not had any contact with EISA myself. The most popular 32-bit card slot standard right now is **VESA Localbus**. To help to curb timing and radio emissions problems, Localbus PC's are limited to two or three VLB card slots (usually two), and people typically use these two slots for video and for hard drive controllers.

Localbus has been around for a couple of years, but it wasn't until last year that it became common and it wasn't until this year that it became affordable. I bought a Localbus 486DX2 66MHz motherboard to experiment with, and for the first time I feel I have encountered a PC that is going at an acceptable speed under *Windows*; it feels about as fast as a Mega STe.

This just confirms what people have been saying for years that "it's not the MegaHertz, stupid!" People look at a 486DX2 66MHz computer and then look at a 16MHz 68030 Falcon and say idiotic things like, "The 486 must be at least four times faster!" That's just not true. Let's try to look at why.

First off, Intel 486DX2 processors are what are called *clock-doubled* CPU's, which run at twice the speed of the actual memory bus. So a 66 MHz 486DX2 talks to RAM at 33MHz and does stuff internally at 66MHz (and gets *really* hot doing it). This is analogous to the situation that people had when they put 16MHz accelerators into their ST's (like the ICD AdSpeed). They had a 16MHz CPU, but the rest of the system was still set to run at 8MHz. And if you recall, a mere doubling of the CPU speed didn't result in a doubling of speed across the board. In fact, a clock doubled CPU is nearly indistinguishable from its half-speed sister, because so much of what goes on inside of a computer involves communication between the CPU and the outside world, which is only accessible through the bus. And if that bus is running at the same speed it always has, how much real speed increase will you see if you just double the CPU speed? Not much.

The JRI JATO board was a flop (circa 1987). It promised double speed, and as near as folks could tell, nothing was happening. It wasn't until another ingredient was added that people could start to see a difference.

A CPU cache (a hunk of static RAM that lives right next to the CPU and can be accessed quickly) is what it took to make accelerators work. Jim Allen has one in his T-16 and T-25 boards, and so does the ICD AdSpeed. CPU caches allow the CPU to do more work before it has to communicate with the outside world again, and thus, more of the CPU's time is spent actually working twice as fast. So, while this improvement does not bring performance up to 200% (because the

CPU must still communicate with the memory, to *fill* the cache), it does bring it up to the 140%-150% range. The Motorola 68030 and 68040 CPU's have built in caches, which help their performance immeasurably. (Just try turning off the cache on a Falcon or TT030 that's running MultiTOS—especially in true color mode ... Not pretty.)

So back to Localbus. We see that the 486DX2 50MHz and 486DX2 66MHz machines *really* operate on 25 and 33 MHz buses, respectively. Since 25 and 33MHz is not too fast, and because you're limited to three slots, the FCC will let you get away with Localbus slots. (Don't forget that you have to enclose your entire PC with iron and make sure to close up all the unused card slot holes; fun.)

But I have made many diversions. What is the VESA (Video Electronics Standards Association) Localbus specification? It describes a type of 32-bit expansion bus that can be accessed at speeds of up to 33MHz and no greater. This *excludes* the 50MHz 486DX processor. (Not the 486DX2 50, but the DX 50. Note the distinction: the DX runs internally and externally at 50MHz. The DX2 runs internally at 50 and externally at 25.)

You can't have your cake and eat it, too. If one wanted to put together a super-fast 486 system, the first choice would be the 486DX 50. But those don't really work with Localbus, so you will have to be left with comparatively slow video and hard disk access. And this means that my first PC, the 486DX 50 machine, can't be converted into a localbus machine by adding a localbus motherboard. How sad!

So your ST (or Mega STE), while it only accesses the screen at 8MHz on a 16-bit bus, has the advantage of having absolutely no barrier between the CPU and the video RAM, so it is able to go as fast as the CPU can compute it. The Falcon and TT030 have a 32-bit bus running at 16MHz, and they, too, have no extra steps between the CPU and the video RAM.

Even with VESA Localbus on a PC, while it is more like a school bus driving around a smaller area to deliver data (larger than our minivan example), you still have a bus / compatibility barrier between the CPU and the video RAM on the video card. Thus, it is not unfair to say that a Falcon030 has video that is just about as fast as a 25, 33, or contestably a 66MHz Localbus PC. And I don't know about you, but video speed is something by which I feel a computer can be judged. If the computer doesn't respond quickly on screen, how fast will it *feel* when you are using it?

When people use Falcon Speed, the 286 emulator for the Falcon, they are always surprised at the real speed of the video. When running *Windows 3.1*, windows snap open and redraws are quick and painless. The reason is that the Falcon Speed directly addresses the Falcon's video architecture, which is some

of the fastest any 286 has ever seen. So, a 286 on the Falcon feels about as fast as a 386DX or 486SX somewhere else. *Imagine what the upcoming 386SX / 486SX emulators will feel like...*

There are other PC buses in the works, like the new Intel PCI bus, for example. It's largely vaporware right now, but it will be another 32-bit bus that will probably run faster than the current 33MHz maximum of Localbus.

Hard Disk Access

I don't want to say a lot about this, but hard disk access is much faster under localbus, and can actually approach 3-5 MB per second with some drives under ideal circumstances. This typically requires a cached drive, and circumstances where the cache in the drive can be used. The ST and Falcon (particularly Falcon) can reach similar results because of its Direct Memory Access (DMA) disk transfer. This also means there's one less stop for the data on its way in from the hard drive. It's as if the hard drive were directly accessible to the main memory, just like the video.

DMA is also the reason the Atari laser printer is so fast. It uses the computer's main memory, and thus requires virtually no time to print out a page once it is composed in the computer's memory.

What's the Point?

The point is that PC makers are just now realizing that fast video (and disk access) in a graphics environment *is a good idea*. Until the advent of Windows and OS/2, PC's had no real need to have quick video (because it was all character based, and that could be done in a compressed, tokenized format, thus placing very little stress on the bus). Now that they, too, have a graphical operating system standard, they are in the 1990's forced to grapple with the issues that Atari solved in 1984 with the video architecture of the ST. Kinda funny to watch, isn't it?

You pay a price for localbus, too. PC systems with localbus, because of the slightly higher prices of the high-speed video and hard disk interface cards, typically end up costing over \$100 more than comparable ISA-only systems. (For EISA or PCI, you pay even more.) A 486DX 33 with localbus, a monitor, 4MB RAM, a hard drive and all the standard stuff will run you around \$1500. And you don't get a DSP sound card, MIDI ports, a fast SCSI interface, or a software package as comprehensive as *Atariworks*. Of course, you can get those sorts of things included in some systems, but expect to pay \$2000 or more.

A 4MB Falcon, as a result, is a pretty good deal at \$1299. You get Localbus quality video with great graphics, great sound, and *Atariworks*. And who needs DOS or Windows? You can see that the Falcon is comparably priced to comparably powered PC's.

Don't Judge a Book by Its Cover

It's really tempting to want to judge everything on a scale of MegaHertz and bits, but the bottom line is that just because a 486 box *says* 66MHz, it doesn't mean it's necessarily faster than a 50MHz machine, and it doesn't mean that it's faster than a 16MHz Falcon030. It depends on what specific application you have, whether you care about graphic speed, or whether, in the case of the Falcon, you have an application that could benefit from having a really fast digital signal processor handy. (It's great for fractals, video compression, sound compression, and even LZH/ZIP type compression.)

The bus used on the system has a large impact on how it will *feel* when you use it, which is arguably the most important factor in a computer. Take a second to think about how the bus works, and whether that type of bus is right for your application.

I think that most of the time, you'll find that the Falcon weighs in quite favorably. It simply doesn't work, though, to compare a Falcon on the same number-scale as the rest of the world. You have to get past the "myths and mysteries" and look at how things really work. And I hope that I have been a help in doing that for you.

Thanks in Advance

I wanted to take a second to thank all the customers, developers (Dave Small in particular—he bought a \$500 plane ticket to come here), and volunteers who will help to make the Tbad Computers Holiday Festival '93 a success—about two weeks from now. By the time this is printed, the festival will have long been over. But thank you, in advance, for taking the time to come out. I think I'll enjoy it as much as you did. Huh?

Have a happy and safe holiday season. We'll be back in February!

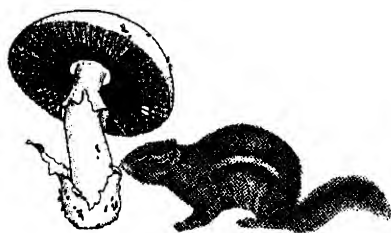
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Merry Christmas to all!



Didot Professional Color

Running Out of Ram by David Barkin

I've made a promise to review *Didot Professional Color*. This promise is fraught with difficulty. For one thing, I don't want to learn it. This is one big program. It bills itself as the ultimate Desktop Publishing Program. Is this true? At the time I purchased *Didot* (Summer 1991), I had just started using *Calamus SL* by DMC. I was more interested in learning *SL*, which, after all, resembled the interface of the earlier 1.09N version of *Calamus*.

From time to time, I would run *Didot*. For one thing *Didot* is Postscript compatible. There is an export driver that turns your files into true .PS files. In time, I also learned that if you tried to save a file whose page format was larger than letter size, the transformation wouldn't work. My main output for Desktop Publishing is one or two page flyers, posters, and leaflets. Brainless person that I am, I still don't own a syquest drive. This means I'm limited to 1.4 meg files on my floppy drive. Saving .TIF files, as *Postscript with Didot*, will double the size of the files. This meant, that for me, these files would not get printed. In other words, rarely did *Didot* come in handy.

Another advantage of *Didot* is its ability to use Postscript Type 1, *Calamus* fonts, and its own font format. This gives you access to a broad range of fonts, sometimes at ridiculously cheap prices. Still, a company called *Mega-type* long ago released two programs called *Fontverter* and *Type One Converter*. With these two programs I can turn any format into *Calamus* format. So while I still buy .CFN fonts from DMC, and anyone else for that matter, I also use PS Type One fonts converted to *Calamus* format. *Mega-type* is in the process of updating their programs to include the Windows True Type format.

Notice, I've already filled two paragraphs without really explaining what *Didot* is all about. Let me bite the bullet, but issue one last warning. I do not in any way claim complete familiarity with *Didot*. I'll do my best.

The Interface

Didot uses the metaphor of a drafting table to put together its documents. The screen image of your document (after setting the size of your actual page) shows a large area, much larger than the page. You

can load all sorts of raster, vector or text files and drop them off the edge of your page. No clipboard, these pieces are just laying around ready for use. If your document contains more than one page, then pages can be moved out onto the drafting table. The only limit being the limit of confusion.

There are a number of advantages to this system. For one thing, you don't have to scroll through pages, you can move them out onto the table and cut and paste by just moving frames. You don't have to wonder what's in the clipboard. Your graphics are scattered around, ready for use.

You *do* have a clipboard option. After all, your document may be quite long. 200 pages laying around on a drafting table, can be quite a bit much. You can also save the ob-

Create New Column	
COLUMN TYPE:	Normal Column Free-form Column
MIN. TEXT LINE WIDTH:	75.00 mm
COLUMN HEIGHT:	240.00 mm
COLUMN ANGLE:	0.00 °
LINE FORMATTING:	Vert. Justified Vert. Offset
LINE HEIGHT:	8.8 pt
DURCHSCHUSSBEGRENZUNG:	max 8.8 pt
MULTI COLUMNS:	2 Columns
GUTTER WIDTH:	10.00 mm
DEFAULT STYLE:	Normal Active
DEFAULT FORMATTING:	FlushLeft Active
CANCEL OK	

Figure 1. Creating standard or free form columns. Depending on your selection, other dialogue boxes are presented.

OUTPUT									
DRIVER: SEIKO Thermotransfer CH-4100/4104 V2.0									
RESOLUTION:	150 x 150 DPI								
PAGE SIZE:	100 x 148 mm (DIN A5)								
MEDIUM:	4-Color				TYPE:	Direct Output			
PAGES:		1 to 1		COLORS:		BOP Gray		OUTPUT:	
LAYERS:		1 to 1		C M Y K		Mirrored		Paper Size	
SIZE:		100 %		0 1 2 3		Negative		Crop	
# OF COPIES:		1		4 5 6 7		Rotated		Tile	
COLOR IMAGES:					TEXT AND GRAPHICS:				
SEPARATION:		Method 1			Method 1				
GRADATION:		Didot			Didot				
SCREENING:		Repro-CD							
OUTPUT					EXIT				

Figure 2. The Print Dialogue of *Didot*. Final screening, resolution and export options are selected from this dialogue.

jects in your clipboard. An entire library of objects can be stored, ready for use.

One incredible weakness in the program is that it runs in ST mono and TT High. In other words, although the program comes with all the features necessary to manipulate color, you can only use the program in monochrome????

Like *Calamus SL*, *Didot* uses icons to activate its functions. Many of these icons will, in turn, activate dialogue boxes to set parameters. Creating a text frame? How large? What font, etc.? These icons can be assigned key equivalents by the user. You can flip from function to function by using these equivalents. Those familiar with *SL* know that icon layers can be deep and mysterious. *Didot's* layers are much shorter and more "intuitive," whatever that means.

The problem with this system, as devised by *Computerbild*, is that each layer is an island to itself. While it is no trouble to assign key equivalents to icons, in order to switch, let us say, from text handling to image handling, requires the mouse. In *SL*, there is a macro recorder, which allows the user to switch between completely unrelated functions. In *Didot* you must return to the main menu and *then* enter your new layers of icons. This is not a cumbersome system. The icons are so set up that the process is relatively easy. But I'm spoiled; *DMC's* system, after the user learns the macro recorder, is much, much quicker.

Text Handling

There are three types of text frames. The column text frame consists of a regular, user-defined column. After selecting this icon, the resulting dialogue box allows you to type in the height and width of the column, select your typeface and type size and other pa-

rameters. You then just place your column on the page. For all frame positioning functions there are a host of snap to grids which can be set, saved and loaded. At any time, you can "grab" one of the control points on the frame and change its dimensions.

The next type of column is the free form column. This column allows the user to distort the area of the text frame. Text can be forced to assume the area defined by the user. Text can be forced into various shapes, although only in straight lines, by moving the corners or sides of the frame. The options are limited but handy.

Finally, you can select the graphic frame option. Essentially, text created by this option can be manipulated as a vector object. In the dialogue box you can define the text to be straight, circular or to follow a path. After this text is created, it can be manipulated as a vector object, yet you can still edit the text in the frame. This is a very powerful feature for short documents, although you are limited to only 256 characters per frame.

Text is entered through a separate text editor. Once selected, this is a window where you can type as fast as you want. There are no special word processing features and, to be fair, one usually uses a separate word processor, to create large blocks of text. The built-in editor in *Didot* is more than adequate for modifying text. Its big plus being speed of typing. Text frames can be filled from the editor or by importing text from a word processor. Text macro's can be defined, loaded and saved as well as style lists. All of these options are quite solid. Indeed, the entire *Didot* program is very solid. I had a hard time trying to crash it. Finally, my dog came up with a number of valid suggestions for crashing the program. I suspect these consisted mainly of pulling the plug on the computer while I was making coffee. Still every once in a while, for no explained reason, the program would crash. But this is the solidest DTP program I ever worked with.

Graphics

With *Didot* you can load and manipulate only TIM, TIH and TIC raster files. These are respectively, modified forms of monochrome, grayscale, and color .TIF files. A number of separate conversion programs come with *Didot* to convert your existing graphic files into these formats. Just as with text frames, raster graphics are loaded by selecting the appropriate icon and then pasted onto the page. Once loaded they can easily be resized, or repositioned or cropped.

Vector graphics can be loaded in the original CVG format, Gem Metafile, GMA format or the native format of *Didot*. Aside from its DTP pretensions, *Didot* contains, built into the program, a full featured vector drawing program. Among the many features included are a free form drawing mode, bezier or straight line drawing, various shapes and all the possible tools to create vector objects. If *Didot* shines in any direction it shines in its vector mode. When one weighs this program, its vector program should be considered. There is also an auto-tracing program built into the program as a module. This program, while not up to DMC's *Speedline* module, let alone Gribnif Software's *Convectur*, is adequate for most jobs.

Finally, *Didot* comes with a full-featured font editor. You can load Postscript Type One, *Calamus*, or *Didot* fonts. Only CFN and *Didot* fonts can be saved. This is a very powerful editor, matching *Genus*, by Codehead software in power and far exceeding the *Calamus* version one font editor.

Printing

This represents both a strong and weak part of the program. Once the printing icon is selected, the resulting dialogue box (figure 2) presents the user with a number of options. You can load in various drivers including a Postscript export driver or a TIF export driver. From this dialogue you can export your files in *Didot's* special format to be sent to a service bureau for printing, assuming your service bureau can print these files. As far as I know only San Jose Computer can print this format. From this dialogue you also select the line screening of your raster and vector graphics. You can also print directly to your printer. I have not fully tested the various drivers.

The HP II driver took about three times as long to print as a similar file printed with *Calamus*. There is no HP IV driver.

This represents a summary of the features of this very strange and powerful program. It will run best on a TT, but a four meg ST will handle the program very nicely, as long as you stay away from huge TIF files. Screen redraws are reasonably fast, but almost twice as long as *Calamus SL*.

How can I make a recommendation? I'm still not sure what to make of this system. I once saw an experienced user give a demonstration of *Didot*. He certainly appeared to be able to whip out professional looking documents in no time. With *Didot*, you can go out and purchase a lino and hook it up to your ST. This program represents a tremendous amount of power.

Whatever recommendation I make (ok, ok, I recommend *Calamus*) is going to be a prejudiced one because, while I can use the program, it's by no means second nature. For short documents, *Didot's* metaphor of a drafting table is very useful. At the same time, it is capable of longer documents. Still, not even the most brilliant user of *Didot* can match an experienced user of *SL* in speed of output. Ultimately, that's how you make money at DTP and that's why I choose *Calamus*. If anyone has extra money, then I would recommend it without hesitation, as a program that can perform certain functions better than anything else.

Updated Version

I've been informed that the version of *Didot* being sold today is an improved update from the version I am using. Among other improvements are a new Postscript driver, the ability to create virtual images (this means that all copies of a virtual image will reflect changes made to the original) and a number of other minor modifications.

In the past I've read very favorable reviews of *Didot* from English magazines. Essentially they said that *Didot* was the program of choice for short documents, *Calamus SL* for long ones. While *Calamus* at first appears intimidating (one of the great understatements), the program, in fact, becomes easy once the macro recorder is learned. At this point in time, I never even see many of the features of *Calamus* that I don't use. I'm too busy switching from function to function by using key equivalents. Some of my key equivalents bring up obscure dialogue boxes that I use and then zoom back to the text editor or to graphics handling. I

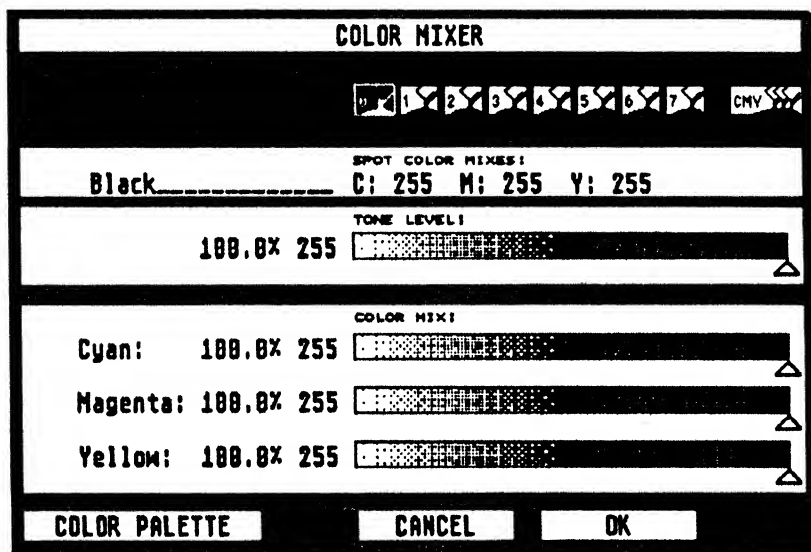


Figure 3. Manipulating color in *Didot*. Of course this would a lot nicer if the program ran in color.

suspect the reviewers I mentioned above had never mastered *Calamus*.

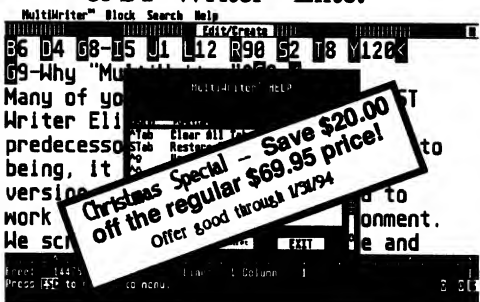
Sometimes I think that *Didot* was created for the purpose of, once and for all, proving that Germans are nowhere near as efficient as they are billed to be. At other times I feel that *Computerbild*, after releasing *Retouche*, suddenly realized that there was no way to output the stunning photos that were generated. As a result, they took an outstanding vector program, added full featured text handling and tossed in a font editor. In summary, I will say that *Didot* is an incredible, solid program, that doesn't know what it wants to be. If I didn't use *Calamus*, then this review, instead of sounding vaguely negative, would be an enthusiastic endorsement.

The program is distributed as a bundle with *Retouche CD*, the photo-manipulation program. Some readers will, undoubtedly, find this a problem. San Jose Computer tells me that they will sell the programs separately. *Didot Pro Color* being sold for \$599 and *Retouche CD* for \$699. Purchased together, San Jose is selling them for \$1,000.

In February, I hope to review the NOVA card in its 24-bit version. I've ordered it and can't wait to use it. Until then...

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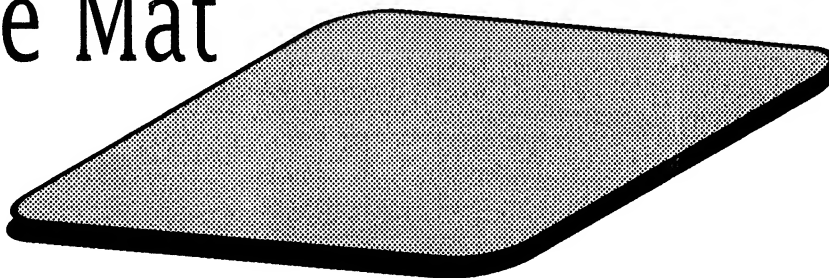
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ST Informer

Genie[®]

NOTES

by Lou Rocha

Raise your hands if you want a Jaguar for Christmas? Well, if you don't live in the New York or San Francisco area you can mail order a Jaguar direct from Atari. The telephone number is 408-745-2098 (FAX 408-745-2088). Order now and you may get one in time for Christmas. This Jaguar update is typical of the "hot" information available in the Atari ST RoundTable. During the last 6 weeks there have been hundreds of messages about the Jaguar, Jaguar game developers and information about the Jaguar rollout in NY and SF. Another hot topic is the Atari stock area where a number of posters have reported their rising fortunes after picking up ATC at rock bottom prices.

In this issue I will finish the primer on RTC commands, check out the Games RT with Sysop Scorpia and bring you highlights of the November Dateline Atari with Bob Brodie. I would also like to take this opportunity to wish you and yours a great holiday season and prosperous new year!

Genie Tips

RTC Commands - Part 3

Last month we began our exploration of the help menu and focused on some intermediate commands like `/roo`, `/job`, and `/who`. This time we will look at some advanced commands. To demonstrate these commands my colleague Sandy Wilson joined me in the RTC area (M475;2).

First of all we need to see each other's job numbers by using the `/sta` command:

Room 1, The General Club room.

Job	City	Room	Sta	Mail	Address
1	Don Mills,ON	1	N	ST.LOU	
2	Somewhere,UT	1	N	SANDY.W	

To ask Sandy to join me in a private conversation, I type `/pri 2`

Job 2 has been asked to enter private mode.

** <ST.LOU> is in private mode.

Sandy types `/pri 1` to join me and then my screen shows

Job 2 has joined you in private mode.

** <SANDY.W> is in private mode.

If Sandy was asking me to join her in private mode, my screen would look like this:

** <SANDY.W> Job 2 requests you in the private mode.

After typing `/pri 2`, I would see

You are now private with job 2.

** <ST.LOU> is in private mode.

Once we are both in private mode, we can have a conversation that is unseen by anyone else:

<ST.LOU> Did you receive your order?

<SANDY.W> Thanks, it came today.

To exit from the private mode we simply type `/xpr`.

The `scramble` command allows a private conversation among more than two people by using a common keyword. All users who enter scramble mode with the same keyword will be in private with each other. Sandy and I used "fish" as our keyword.

`/scr fish`

<ST.LOU> Scramble key is (FISH)

<SANDY.W> Only those using `/scr fish` will see our text?

<ST.LOU> Right. Anyone with the keyword can join us in private.

To leave scramble mode type `/xsc`.

There may also be times when you want to monitor what is happening in one room while you are in a different one. In this case you can use the `monitor` command.

After using the `/roo 2` command to enter room 2, I can monitor room 1 by typing `/mon 1`:

(Room 1)** <ST.LOU> is Monitoring.

Monitoring room 1.

(Room 1)<SANDY.W> I wonder where Lou went?

I can see Sandy but she can't see me unless Sandy types `/mon 2`. Then I would be alerted that she was monitoring my room:

(Room 2)** <SANDY.W> is Monitoring.

To leave monitor mode, I would type `/xmo`. If Sandy typed `/xmo` I would see

(Room 2)** <SANDY.M> not Monitoring.

Our final advanced command is the `squelch`. It is used to block public or private messages from a designated user.

Sandy types `/squ 1` and my screen shows

** <SANDY.M> Has Squelched you.

While I am squelched she will not see anything I type. If I try to send a private message like `/sen 2 Hi`, I would see `You have been squelched by that job.`

To unsquelch me, Sandy types `/xsq 1` and I see

** <SANDY.M> Has Xsquelched you.

This command should be used discreetly as other users can be easily offended.

Well, that wraps up our primer on RTC commands. I hope that you will join the growing number of attendees in the ST RoundTable RTC's. We have just added another regularly scheduled conference for beginning and intermediate programmers on the first and third Thursday of each month. Our other regular RTC's are the HelpDesk at 9:00 p.m. on Sundays; DTP/Graphics at 10:00 p.m. Mondays; Open House at 10:00 p.m. Wednesdays; Dateline Atari with Bob Brodie at 10:00 p.m. on the first Friday of each month.

Around GENie

Multi-Player Games RoundTable

Thanks to SCORPIA, chief SysOp of the MPGRt for submitting the following article.

Are you lost in the Troll Caverns? Have you found the unfriendly skies just a bit too unfriendly? Or maybe your 'mech is melting down at the wrong moment in a firefight? Don't despair! Help is available!

Whether you prefer the fantasy of *Gemstone* or *Dragon's Gate*, the thrill of dogfighting in *Air Warrior*, space trading in *Federation II*, mech warfare in *BattleTech*, or pod-to-pod combat in *CyberStrike*, the Multi-Player Games RoundTable, on page 1045, can give you the edge you need in any of GENie's online games.

The bulletin board contains a wealth of playing tips, game information, and "inside stuff" that you won't find anywhere else. Many of the major players frequent the board, and they are always ready to help new gamers learn the ropes. The game designers also look in on the board to answer questions and make

announcements about enhancements and changes to their products.

Libraries are an important resource, too. Video-cams from *Air Warrior*, special sound files and artwork for games, message archives, transcripts, game-play guides, and much more, besides, are waiting for you to download. Along with the bulletin board, these files can help bring you up to speed quickly.

Online conferences are held every week for *Air Warrior*, *Fed II*, *CyberStrike*, *BattleTech*, *Dragon's Gate*, and *Gemstone 3*. Game designers or members of their staffs are often present as special guests at these RTC's.

In addition, there is the Multi-Player Guilds Bulletin Board on page 1048. This special area allows the individual teams, guilds, and houses, from all the games, to have their own private categories. Here they can talk about team business, discuss tactics, wrangle over game politics, or just let their hair down a little.

The MPGRt is staffed by one chief SysOp, three senior SysOps, one Librarian, and eight assistant SysOps. Senior SysOps supervise multiple areas of the RT, while the assistants concentrate on particular game categories. All staff members were chosen from among the MP game players. They know a lot about the games, and are always ready to help other players, in or out of the games.

So don't go it alone. Learn more, play better, and have more fun by visiting the Multi-Player RoundTable on page 1045. You'll be glad you did!

RTC Highlights

Dateline: Atari — Jaguar Roll Out

Our regular RTC reporter, Brian Harvey, is on holiday so this report will be a little briefer than usual *<grin>*. In this issue, we present the opening comments from Bob Brodie during the Nov. 4th session of *Dateline: Atari — the Jaguar Roll Out Press Conference in New York*. The following excerpt is taken from the official RTC transcript, courtesy of GENie. All copyrights apply.

[Bob & Ron] BOB-BRODIE> Welcome one and all! We have just returned from the jungle!! Atari has just rolled out the 64-bit home entertainment system to a standing room only audience on the 48th floor of the Time-Life Building in New York City.

What we have witnessed tonight is a new era for Atari Corporation. The introduction and announcement of release of the Jaguar, a 64-Bit home entertainment machine. On hand at the press conference were Jack Tramiel, sons Sam, Leonard and Garry, myself, Bill Rehbock, James Grunke, Augie Ligouri, Ter-



ry Valeski, John Skruch, Susan McBride, Purple Hampton, and many other staff members from Sunnysvale.

Major press agencies such as CBS, NBC, ABC, CNN and local reporters from the New York Times, Wall Street Journal, entertainment and Atari media were in attendance at the event. Heard from nearly ALL of the attendees were WOW and shouts of excitement from the presentation hosted by Sam Tramiel.

Guests were greeted by three male and female jet black leather and vinyl costumed jaguar cats. Tropical foliage, flowering bamboo, moist fog, blue and green tinted pin spots and animal cries, deep from within the heart of the jungle.

Inside, the concept changed dramatically. Encircling the entire event were Atari Jaguar and Lynx kiosks; accented with blue neon rods, ice blue pin spots and more tropical foliage. Positioned in two corners of the room were wire cages with the jaguar-costumed dancers.

Sam gave a presentation, accompanied by video displays of the Jaguar TV commercial, and sales videos for the retail stores. There was no expense spared to convey the messages to the attendees that Atari is serious about marketing the Jaguar. No fewer than 12 screens positioned throughout the room carried the video, as well as Jaguar game play. Ten Jaguar kiosks were stationed throughout the room, each showing a different video game title. John Skruch and other employees were also prowling the crowd with pre-production EPROM carts in hand, ready to show the visitors the future of Jaguar gaming.

Atari announced the signing of a number of new developers for the Jaguar tonight, including Virgin, Interplay, Microprose, UBI Soft, Gremlins Graphics, Millenium, and Accolade. Accolade will bring *Bobsy*, *Jack Nicklaus Gold*, *Al Michaels Announces Hard Ball*, *Brett Hull Hockey*, and *Charles Barkley Basketball* to the Jaguar. Atari Games announced that they will be using the Jaguar as a board for their arcade games. There will be a few other developers that will be announced in a press release a little later on, as well as more details regarding the specific titles that they will be developing for the Jaguar.

Tonight, it was also brought to my attention that there are reports circulating stating that we have stopped our computer business. I'm happy to state that this rumor is 100% FALSE!

Atari is not leaving the computer business, we are still producing the Atari Falcon030. Just a few weeks ago, James Grunke was here in New York for the Au-

dio Engineering Society Show, where *Cubase Audio* for Falcon by Steinberg was released. We feel that the Falcon is just now starting to see applications that take advantage of its unique capabilities.

A few days later Bob posted this message in the ST RoundTable...

"If you reside out of the areas that we will be selling the Jaguar in, our Customer Service Department will be happy to accept your order for Jaguars. We are already accepting orders. You can call Customer Service at 408-745-2098, or FAX them at 408-745-2088. If you don't have a fax modem or access to fax machine, don't forget that GENie offers a very nice FAX service! In the event that you choose to call, please be patient! The lines are

very, very busy right now, and we're a tad understaffed."

In addition to the Dateline RTC, November had its usual share of formal and informal conferences, including one with Charles Smeton (*STraight FAX*) and David Troy (TOAD Computers); this RTC will be covered when Brian returns. We also had the inaugural meeting of the Programming RTC in which the groundwork and schedule were organized with eager participants. The Programming RTC will become a regular feature on the first and third Thursday of every month. If you have an interest in programming, why not join this working group – the more the merrier!

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Sign Off

Well, that about ends this month's abbreviated column. Next month we will have Brian and Larry back with their regular contributions and will also be adding some new departments. If you want to reach me on GENie, just send email to ST.LOU. Prompt replies are a way of life on GENie!

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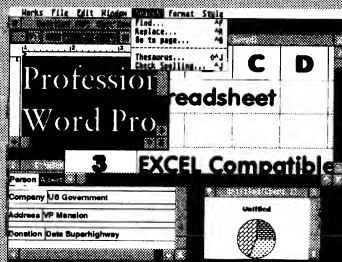
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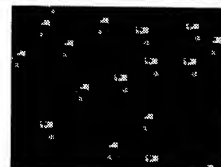
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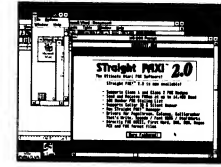
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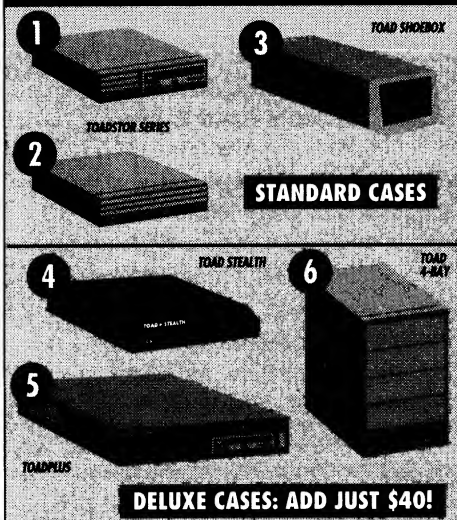
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8-Bit GENIE Front Ends

I never mentioned what this school is all about that I'm attending here at Fort Belvoir. It's called Defense Systems Management College. Program managers for the big Department of Defense acquisition programs are required to attend by law. I'm not one of those yet, but, hopefully, this school will head me in the right direction. Once I graduate, I will be in charge of the earth-based part of a \$14 billion early warning satellite program in Los Angeles. I've been in the weapon system acquisition business all my Air Force career and have seen quite a sum of taxpayer dollars change hands. In spite of what you may hear, we do a pretty good job, especially compared to other countries.

One advantage that the US defense acquisition business has over other countries is that it is highly computerized. We take courses here on computerized program management decision support systems. All the financial accounting systems are computer based, of course. In a short while, our environment will be paperless, with all information to include manuals, drawings and reports, to be available solely as "soft-copy" on computer. We'd die if it weren't for the electronic spreadsheet to help us estimate program costs. Everything we do in my business is touched by computers. In fact, the system I will be managing in Los Angeles consists mainly of computers. So I will be using computers to help me buy more computers. Are computers procreating already!

Elsewhere in This Issue

We have three old hands this month, joined by one new guy, Dave Paterson. Dave is a full time student and part time member of the Canadian Armed Forces. He's informed me that he intends to organize his disk collection before the turn of the century. (Odds are he won't make it.) Fortunately, Dave did manage to finish the latest version of his HyperCard program for the 8-bit which he describes for us in this issue of *CN*.

Our Atari Classic farmer, Tom Andrews, is back with informative and useful piece on making signs with your 8-bit computer. If anyone knows where to get copy of the *Converter* program for Print Shop Icons that Tom mentions in his article, or if you have that program, please let me or Tom know.

Kevin Packard, our resident *Diamond GOS* programmer, rejoins us with some insights that will allow you to animate your 8-bit's mouse with Atari BASIC through Diamond.

Finally, Mike Tbdd gives us the ins and outs of adding an IBM PC style keyboard to your Atari Classic with DataQue's TransKey.

Small Business System Clarification

We may have created a bit of confusion with the use of the term ATASCII in our review of Black Moon's *Small Business System* (SBS). Since SBS is written in Atari BASIC, it uses the standard decimal "155" for a carriage return rather than the standard ASCII CTRL_M, CTRL_J. So SBS data files are stored in standard ATASCII format. If you manually edit an SBS data file with a word processor, you need to make sure that it is saved with those "155s" intact and that the word processor's formatting commands are not stored into the data file. *AtariWriter* will automatically add formatting commands to the beginning of a text file. So when using *AtariWriter+*, you will need to save using the ASCII storage option, which is an unfortunate choice of words. If you use *TextPRO*, you don't need to worry about formatting commands being added to the file (unless you manually add some).

American Techna-Vision Holiday Sale!

Right before we went to press for the November issue, we received a super special coupon from American-Technavision (ATV) to insert into the issue. So, we fit it in (sorry about the placement, guys) and added a small box to my column to call attention to it. ATV wants you to tear the page out of the magazine, in case you didn't read the coupon carefully. It's a small price to pay, given the fantastic savings you get. The prices are absolutely phenomenal! We're talking half price on almost all (if not all) of ATV's stock of new software and hardware items. (\$20 for a 1050 Drive Mech! Get out of town!) Just to allay any fears, when I talked to ATV's owner, he assured me that he was not going out of business. He just wanted to provide a "one time good deal" to us 8-bitters. We thank you kindly, ATV, for thinking of us. Sale ends January 31, 1994.

CSS Holiday Sale!

Computer Software Services (CSS) is also having a holiday sale from December 1, 1993 to January 31, 1994. It is not unlike the one they held last year for the unveiling of Atari Classics. CSS will be mailing flyers on the sale to their database the beginning of December. If you don't get a flyer, call or write CSS and request one. Here are a few examples of the sale items: Super Archiver II (\$49.95), XF Enhancer (\$29.95), XF Dual Drive (\$119.95), Multiplexer (\$149.95), Black Box (\$179.95).

CSS has also re-inventoried and updated their used hardware and software catalog. If you need something specific, give CSS a call and see if they have it. For further information, contact: Computer Software Services, P.O. Box 17660, Rochester, NY 14617. Voice: (716) 429-5639; FAX: (716) 247-7158; BBS: (716) 247-7157

GENie News

The big news on GENie is that there is now a working 8-bit "front end" hosted on a commercial program called *BackTalk*. *BackTalk* is available from B&C Computervisions for \$17.95. It's not the greatest terminal program around, but it has a very powerful macro feature that allows complex interactions with the host BBS or, in this case, GENie.

Initial efforts to create *BackTalk* macros were started by Glenn Saunders, who then passed the effort to Jim King (Kamario King), who put out the first beta test version in late October. The macro file is available on GENie as File #6654. I haven't personally tried to use it, since I don't have *BackTalk*. The macro will allow you to auto-logon to GENie, check for and scan all new mail, check for and scan all new messages and check for and scan all new files. The macro will need to be customized for your particular set up and passwords. If you're not up to that, you can contact Jim via E-mail, send a GIFT OF TIME for \$4.00 (to J.KING73) and he'll gladly set aside some time to customize your personal macro; to include adding scans to other RT's, BB's, inserting your region's GENie dial-up number and so forth. Jim is also in the process of programming a stand alone Aladdin-type clone, but that is several months away.

In parallel with this, Jeff Williams (ALFRED) has a beta copy of his program *Djinni* out for testing. This is yet another Aladdin clone for the 8-bit that lets you do just about everything Aladdin does for the ST. It's written in Action! and it is very fast. I'm actually testing it myself and it looks very promising.

I'd like to publish reviews of all these GENie front ends in *Current Notes*, once they are a little more solid. Let me know if you are interested.

The Thursday night Real Time Conferences are still going strong on GENie as well as several other in-

teresting programming efforts. One is called *FlickerTerm*, which is a new terminal program. The other is *HyperE*, which is an 8-bit screen display accelerator. There have been quite a few technical discussions on these two in the message bases. There are lots of great new files in the Library. One is the latest listing of 8-bit files at the University of Michigan Atari Archive (File #6651).

CompuServe News

The CIS Sunday night CO is still languishing and the library is a bit slow, but the message base has been bursting lately. Here are a few interesting tidbits from the message base that might be of interest.

Recently, there have been a lot of RS232 "pin out" questions on CIS. Cai Campbell posted some information about a product that solves your RS232 cable problems forever. It's called the Smart Cable. Smart Cable is advertised as "The only serial cable you need to own!" It comes with a logic module that automatically adjusts for the correct pinouts of two devices. Cai has been very happy with his Smart Cable. It retails for \$49.00, but you can probably find it on sale. If you cannot locate it, you can contact the manufacturer directly: IQ Technologies, Inc., 22032 23rd Drive S.E., Bothell, WA 98021-4497. Voice (206) 483-3555; FAX (206) 485-8949.

Someone recently asked how to hook up a Laser Printer to an 8-bit. I was pleased to see Albert Dayes of *Atari Explorer Online (AEO)* provide a detailed response on how to send postscript commands from your 8-bit to do this. Mind you, *AEO* is an ST publication! It was pretty neat. I have the command set, if you are interested. It will work with any computer.

New Atari User Magazine

Our publisher, Joe Waters gave me a huge stack of Great Britain's *New Atari User (NAU)* Magazines from last month. *NAU* is a very good magazine. Here are couple of observations:

NAU is principally an 8-bit magazine, though it has a few ST pages at the end of it. Sort of reminds me of the early days of *Antic*, when the ST was born. They have a monthly column on STOS for the ST. STOS is an ST game programming language that never quite caught on here in the States.

About a year ago *NAU* went to an "all subscriber" basis and newsstand copies were no longer available. At the same time, the pretty multicolor covers gave way to two color covers. *NAU* is still printed on glossy paper, but it is obvious that they are going through a "right sizing" effort like everyone else. Overall quality of the magazine appears not to have diminished.

I note that at least three 8-bit articles from *CN* have been printed in *NAU*—about a year after they appeared here. I'm flattered.

The great majority of articles revolve around type-in programs. If you are into that, this is the magazine for you. Subscribe immediately!

The Europeans are still heavy into cassettes. In fact, *Speed Hawk*, one of the last games ever released by Atari Corp, only comes on cassette. I don't think it was even released in the States. In fact, there is a ton of stuff advertised in *NAU* that I have never heard of. It's like being a kid in a candy store, going through the ads. One of the vendors, the Accessory Shop even takes VISA and MasterCard, so you can buy things without a lot of hassle (i.e. no international money orders).

You can get a disk with each issue, if you don't want to type in the programs each month. There are reviews of both old and lots of new programs. A big highlight is the mailbag, which is quite interesting. There's even a pen pal section! And, of course, you get to read about all that new programming happening "on the Continent." In all, an issue averages about 64 pages. Here's the subscription info: New Atari User, P.O. Box 54, Stafford, ST16 1DR United Kingdom; Voice: 0785 213928; Annual subscription cost (6 issues): North America (17£ surface, 23£ airmail); Disk (32£ surface, 42£ airmail.)

Sources List

We're plugging away at the definitive Atari sources database. I'm still trying to work with the *Atari Classics* (AC) people to see if they want to pull off a coordinated effort. I'll keep you posted on that.

I'm still looking for people to help verify sources. So far, we've verified 34 valid Atari sources. Twelve places have turned out to be dead. Twelve places are in the process of being verified. Over 40 places still need to be checked out. Let me know if you are willing to help. I also want to hear your comments and suggestions about this project. What information do you want to see in the list? Is there a place we haven't shown thus far that you want us to verify?

Here's the third increment of the list we've been working on. Special thanks to James Carney who got the info on several of this month's entries.

Bolt's Electronic Repair Service, 15737 Le-Marsh Street, Sepulveda, CA 91343. Repair. Authorized Atari Repairs. Specializing in 8-bit computers and disk drives. Owner: Joe Bolt (Verified 7/93-rlr.)

Data 8, P.O. Box 210, Mouth Card, KY 41548. HW SW vendor. Formerly known as **Phantoms Atari 8-bit**. Carries some used hardware. Write for list. Repair work on ICD R-Time 8 cart, \$20 + \$2 postage. Carries PD, used, and imported software (games, applications, utilities). Disk catalog: \$5 with variety of

imported programs; \$2 without imported programs. (Verified 10/93-jmc.)

Electronic Clinic, 4916 Del Ray Ave. Bethesda, MD 20814. (301) 656-7983. HW SW vendor/repair. Refurbished equipment, new and used software, service. No catalog, call for items or visit. (verified 8/93-rlr.)

K-products, P.O. Box 22122 A.M.F., Salt Lake City, UT 84122. HW SW developer/vendor. Voice: (801) 967-7400; BBS: (801) 967-8738. Develops and supports BBS Express! Professional 8-bit BBS, Supra HD interface, DK Utilities, HardBack/Restore. Owner: Bob Klaas. (Verified 11/93-rlr.)

Novatari XL/XE PD Library, C/O Geoffrey Dimego, 8612 Thames Street, Springfield, VA 22151. S/W vendor. (703) 425-5030. PD archive, 221 disks. (Verified 9/93-rlr.)

San Jose Computers, 1278 Alma Court, San Jose, CA 95112. HW SW vendor. Voice: (408) 995-5080; FAX: (408) 995-5083. New and reconditioned hardware, software. Owner: Mark Dalldorf. (Verified 9/93-rlr.)

Software Infinity, 642 East Waring Avenue, State College, PA 16801. SW vendor. (814) 238-7967 (24 hr ans) Extensive PD listings and some imported software. Send SASE for sample hard copy list. \$2 for comprehensive disk catalog. (Verified 10/93-jmc.)

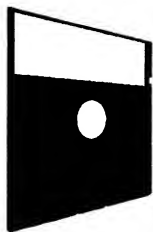
Surplus Computer Software, 3301 S. Harbor Blvd, Santa Ana, CA 92704. S/W vendor. Voice: (714) 751-2667; Fax: (714) 751-0914. Large selection of new Atari 8-bit software. No catalog currently available. (Verified 7/93-rlr.)

Toad Computers, 570-F Governor Ritchie Highway, Severna Park, MD 21146. HW SW vendor/repair. Info: (410) 544-6943; FAX: (410) 544-1329; Orders: (800) 448-TOAD. New, used, and reconditioned hardware. New and used software. Repairs when economically feasible. Owner: Dave Troy. (Verified 8/93-rlr.)

TWAUG, P.O. Box 8, Wallsend, Tyne and Wear, U. K. NE28 6DQ. Publisher. CIS: 100120,2025. Newsletter of the Tyne and Wear Atari User Group. Produced entirely on an 8-bit Atari. Published every other month. Contact: David Ewens. (Verified 9/93-rlr.)

T.W.E., P.O. Box 44251, Parkland, WA 98444. SW vendor. Trans World Exchange. Shareware programs by Roland Pantola and Polish imports w/English translation. Send SASE for listing. Introductory offer-3 game set in basic (*Mastermind*, *Calendarium*, and *Dzungla*) for \$3. Make checks payable to Chris Carson. (Verified 10/93-jmc)

That's all for now. You can contact me via the snail mail or e-mail addresses at the front of the magazine.



CardStax

Hypertext for the Atari 8-bit

by David A. Paterson (GENie: D.PATERSON2)

With the advent of *HyperCard* for Mac computers, hypertext has become a fast moving area in personal computers. Until now, there really hasn't been a way to create your own hypertext applications for Atari Classic computers.

CardStax is a hypertext creation and viewing package for all Atari 8-bit computers. There's an editor to create cards, and the main program to display stacks that you've created. But this begs the question, "Just what the #&! is hypertext, anyway?"

At its most basic level, hypertext is a family of fragments of text that can be addressed in a non-linear fashion. Or, in English this time, it's like reading a book using whatever order of pages you want. Hypertext systems are designed to let you read what you want when you want, without flipping through piles of irrelevant information.

Infocom's text adventures, like *Zork* or *Planetfall*, are good examples of hypertext—the user controls the environment and pacing of the text. The user determines the order of events, unlike traditional books, which present the reader with the story already complete in a final form. Most modern hypertext systems let the user make his selections with a pointing device, like a mouse or joystick.

Hypermedia goes one step further. It is hypertext with pictures and sound. *CardStax* is actually a hypermedia system, letting you mix full screen graphics with text and sound. How does it work?

CardStax is built around two main concepts, **stacks** and **cards**. A **card** is a collection of information to be displayed on the screen, along with instructions on how and where to display it, as well as how the card links up with other cards. A card can have up to six links in it. These links define an area, the next card to load (if any) and a machine language routine to call.

A **stack** is merely a collection of cards. In *CardStax*, all the cards for a stack are stored in a sub-directory, so they don't clutter up the main directory. If you don't know the difference, don't worry. *CardStax* handles all that automatically.

If you want to create your own stacks, but, like me, have little or no artistic talent, take heart! *CardStax* is designed to take many pre-existing graphics files and display them. The editor lets you combine *Micropainter* pictures, or any 62 sector picture files, along with *Print Shop*™ graphics, text and even *Poke*y

Player music files! Advanced programmers can write machine language routines to add to their stacks.

CardStax also supports a number of different pointing devices. You can move around the program using a joystick, Touch Tablet or even an ST mouse! Simon Trew of London, England wrote the pointer routines and released them as *MultiMouse*. *CardStax* also permits you to print out any screen display to an Epson or compatible printer, using the G: device handler written by Charles F. Johnson.

CardStax isn't the equal of a program like *HyperCard* for the Mac. But it will let you experiment with hypermedia on your Atari. I'd love to see what you can come up with. Your imagination is the only limit!

CardStax is available on GENie as file #6683, and on CompuServe in Library 4 as CRDSTX.ARC. If you don't have access to either of those networks, I'll make you a copy for \$5 to cover the disk and mailing expenses. My address: David A. Paterson, 4900 Doherty Ave., Montreal, Quebec H4V 2B2 Canada.

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STD525 POWER PRINT
STD922 POWER VISION
STD924 POWER EDIT
STD933 MICRO MAKE



Making Signs With Your 8-bit

The Theory of Signmaking with Practical Applications

By Thomas J. Andrews (GENie: J.ANDREWS24)

My family operates an on-site retail vegetable outlet (That's a farm stand, for the politically incorrect.) on our farm here in Central New York. As you can well imagine, good signs are an important part of this, or for that matter, of any retail operation. Signs can be used to inform customers of a wide variety of things such as where to park, product identification, availability, unit of sale, price, and others.

For the past few years, I've been generating many of our signs with my XL system. I've looked at several programs that can be pressed into this service, but have settled on three for most of the work: *Print Shop*, *Print Power*, and *Signmaker*.

My signmaking hardware consists of a 256K Rambo-enhanced 800XL, XF551 and 1050 drives, 850 interface, a Gorilla monochrome monitor, and two 9-pin printers—a Star Gemini 10X and an Epson LX-800. All hardware and software, except for the Rambo upgrade, XF551, and *Signmaker* were purchased used at garage sales and other sources at, I might add, excellent prices.

So What Kinds of Signs Do You Make?

We use a variety of signs for a variety of purposes. The larger, more permanent signs, like the roadside "Fresh Vegetables Just Ahead" signs, are not generated by the computer. Our stand is exposed to the weather, and we find that computer signs don't hold up well enough to be exposed to the wind and rain for long. (I do, however, have secret plans to try to generate patterns for those permanent signs when next they need replacement.)

At the stand itself, we'll frequently use banners to identify our leaders to potential customers as they look us over from the road. In retail parlance, a *leader* is an item used to attract customers, often sold at a relatively low price. If that price is unprofitable, it becomes a *loss leader*. The theory is that once customers stop for the leader, they'll buy other things, too, and the total purchase results in higher profits. You can't make any profits at all if people don't stop. We only deal in seasonal produce, so our leaders change as the season progresses.

Once the customer is at the stand, a lot of information must be made available. By tradition, different items are priced according to different criteria. Some are by count, others by weight, still others by volume, and some by appearance, and the customer

needs to be informed as to which is which. Some unusual, exotic vegetables or newly developed varieties need to be identified, and the customer needs to know what makes them better, or at least different, from what they're used to. Sometimes we'll even provide basic cooking instructions for these exotics. Other signs may proclaim a special deal for quantity purchases, or a special service we provide on order. Still others will make a special request of the customer, like "Please Don't Pick up the Pumpkins by the Stems."

That description makes it sound like we have wall-to-wall signs, and, of course, it isn't like that at all. Not all types of signs are used on all produce items simply because they aren't needed, and too many signs just get in the way.

In general, our signs need to be noticeable, yet unobtrusive. They need to enhance rather than conflict with the particular display involved. As such, we need a variety of sign sizes, so that the size may be matched with the purpose. This is the biggest single variable we require.

The most important purpose of a sign is to get the message across, and this needs to be remembered at all times when designing signs. We like to have the style consistent across all signs. Graphics are used only when they enhance the message, or to make the sign more noticeable. The same thing goes for borders and special effects. We use as few fonts as possible, and these are all similar to each other. Oh, there are exceptions, of course, like oriental fonts and graphics for oriental vegetables. We try very hard not to go overboard with this stuff, because the product is what is supposed to be admired, not the sign above it.

Whew! There's More to This Than I Thought!

There sure is! It's taken us over 30 years of trial and error to learn what works best for us. That's why we need three signmaking programs. No single one is versatile enough, at least not of those I've seen yet. Each one has its strengths and weaknesses.

Making Signs with Print Shop

Print Shop, by Broderbund Software, is probably the best-known of these programs. It has four forms of output that can be used as signs: Signs, Banners, Greeting Cards, and "Screen Magic."

One big advantage of *Print Shop* is its Graphic Editors. The Graphic Editor on the original *Print Shop* disk can be used to change existing graphics or create new ones, using keyboard, joystick, or Atari or Koala touchpads. The *Print Shop Companion*, a separate program, has an improved Graphic Editor along with Border and Font Editors. Due to these editors, literally hundreds of *Print Shop* graphics, popularly called icons, are available from various public domain sources. The ACE of Syracuse User Group's 8-bit disk library alone contains 14 disks packed with *Print Shop* icons. Because of the existence and widespread availability of these icons, several programs have been written that use them. *Antic* magazine once published one that would print mailing labels with them, and another that would print more varied banners using *Print Shop* fonts. Unfortunately, few of these icons have a vegetable theme, and I'm no artist.

Another of *Print Shop*'s big advantages is that it is one of the easiest 8-bit programs to learn and use. The manual is almost superfluous, and novice users can produce quality output the first time they boot up. Well-designed menus guide you through your creation, and at each step you can go back to an earlier one merely by pressing the ESCAPE key. There are few commands to learn.

Ironically, that advantage is also the cause of *Print Shop*'s biggest disadvantage. In order to make the program so easy and foolproof to operate, the designers chose to limit user options as to the forms of output. Only one font and one icon may be used per "page." Icons can only be in one of three sizes in Signs and Cards, only one size in Banners, and can't be used at all in Screen Magic. Icons can only be placed in certain positions, too. Only two relative sizes of text are possible on Signs, Cards, and Screen Magic, and only one on Banners. Each font is a different size, making font selection a matter of how much text you can fit on a page with it as much as how it looks. Banners can only be horizontally oriented, and borders are allowed on Signs and Cards only, and then only one size and all the way around.

Of course, there are ways around some of these restrictions, but using these "workarounds" can become tedious at best. Multiple fonts and icons can be put on a "page" by making two or more pages, printed over each other. This, however, requires very careful design planning and paper handling. More font sizes can be obtained by using the *Companion's* font editor to create new fonts in sizes other than those already existing.

Print Shop comes with several printer drivers, but noticeably absent are drivers for 24-pin printers and older models of some makes. 24-pin printers that will respond to 9-pin commands will work fine, but the extra graphics capabilities of these printers cannot be

used with the existing drivers. At one time, I attempted to use *Print Shop* with a Star Gemini 10, the precursor to the Gemini 10X. There is no Gemini 10 driver on my disk, and the 10X driver wouldn't work. Unfortunately, there is no provision for creating a custom driver. However, I have seen a PD driver for the Atari XMM801 advertised that purports to work with *Print Shop*, so someone must have figured out how to do it. *Print Shop* is written for one-drive systems, and there is frequent disk-flipping and swapping, another disadvantage. After totalling up the advantages and disadvantages, it was obvious that *Print Shop*, by itself, wasn't sufficient for our signmaking needs.

So, What About Print Power?

Print Power, by Hi Tech Expressions, a division of Hi Tech Creations, is somewhat similar to *Print Shop* in scope, but there are several important differences. Some make it better; others make it worse.

The biggest advantage *Print Power* has is its versatility. It, like *Print Shop*, has different output forms that can be pressed into sign service—Signs, Cards, and Banners. Unlike *Print Shop*, however, *Print Power* forms have multiple sizes and orientations available.

Print Power Signs may be oriented vertically (like *Print Shop*) or horizontally, and a half-page size is available. Cards may be tall (like *Print Shop* again), wide, or "tent" style. Only horizontal orientations are allowed for Banners.

The versatility doesn't stop there. Up to four fonts may be used on one "page," and there are seven special effects available for each font, compared to *Print Shop*'s three. Characters may be in three different sizes on Signs and Cards, and up to 11 on Banners. Banners may have multiple text lines. *Print Power*, and another Hi Tech program, *Sesame Street Print Kit*, are the only 8-bit programs I've ever seen that will produce multiple-line banners.

There can be only one graphic per "page," but there are five different graphic sizes available on Signs and Cards. Three of these are automatically adjusted to fit all, half, or a quarter of the available area, while the other two are in two set sizes. You can place as many copies as you want of one size of a single graphic anywhere you want, as long as they don't overlap. Banner graphics can be placed on either or both ends of the Banner, and size is automatically adjusted to fit the text area. Banner graphics can be flipped on one end for a "bookend" effect.

Borders can be placed all around Signs and Cards, and also on the right, left, top, bottom, both sides, or top and bottom—and can come in two sizes. Borders can also be used on the top, bottom, or both on Banners.

Of course, *Print Power* isn't perfect. Its biggest disadvantage is the lack of graphic editors. This

means that you are locked into using the fonts, graphics, and borders supplied with the program and can only get others if Hi Tech decides to release a diskfull. At the time *Print Power* was released there was an additional graphics disk available, and *Print Power* does have the ability to utilize the graphics disk from another Hi Tech program, *Awardware*. Even with these disks, the selection of graphics pales beside that of *Print Shop*. No Frills Software once published a program called *The Converter*, which was supposed to convert *Print Shop* icons into *Print Power* format. Borders and fonts were not converted. I haven't seen that program in action, and have no idea of how well it works.

Print Power requires a drive capable of using Atari's enhanced density (DOS 2.5) disks, something which mystifies me. Back in 1987 or so, when *Print Power* was first marketed, there was, and still is as far as that goes, a good-sized percentage of 8-bit users with only single or double density drives, from various manufacturers. Some of these drives could read an enhanced density disk, but couldn't write to it. Here's a case in point:

Print Power contains an undocumented feature where the parameters of the last Sign, Card, or Banner are saved to the disk in drive #1 so that they can be recalled and edited even after the computer is powered down. This is a handy feature, but if the disk in drive #1 has no empty sectors in the single density range, the program bombs. This happened repeatedly to a fellow ACE of Syracuse member trying to use an Indus drive. A 1050 worked fine. Why would any commercial software developer not bent on self-destruction exclude a large portion of his potential market like that? It doesn't make sense to me.

Print Power supports several printers, including some 24-pin models. I did have a little problem at first, though. While the reference card inside the box stated that there was a driver for the Gemini 10X, there was none on the disk. I used the one for the Star SG-10, the successor to the 10X, and that seemed to work, at least most of the time.

Print Power is also much slower than *Print Shop*, largely caused by its higher versatility. Some speed can be saved by using more than one drive-putting the program disk in drive #1 and the graphics disk in drive #2. If you use an XL or XE computer with more memory than a 48K 800, there is a way to increase that speed some more. *Print Power* has a memory reconfiguration option in its setup menu that allows the user to select what part of memory to use. This option supports expanded RAM machines, and is undocumented except for a small note on the reference card under "Helpful Hints." *Print Power* bit-maps its output in sections, filling a buffer and dumping it to the printer before going on to the next one. With a 48K

configuration, a banner saying "TOMATOES" in 3-inch letters took 10 "passes." Using 256K, that was reduced to only 2.

This memory reconfiguration resulted in the only problem I had with the Gemini 10X, a consequence, I believe, of not having the correct driver. At random times during printing, the 10X would act as if it had dropped some bytes during transmission, getting hopelessly lost. The slower print speed of the 48K configuration seemed to compensate for the problem. So far, the Epson LX800 has performed flawlessly with *Print Power*, in all configurations.

Print Power does have an option in the setup menu that appears to be a custom printer/interface driver editor. Unfortunately, there is no documentation anywhere for it, and to navigate through it without some would be difficult indeed. I left it alone.

That automatic save option means that you can't have a write-protect tab on the disk. Fortunately, *Print Power* is not copy-protected, and the documentation even recommends making a backup copy, so I made two backup copies. I now use only them and have the master disks carefully put away for safety.

Since acquiring *Print Power*, I use it more for signs than I do *Print Shop*. None of the graphics supplied are appropriate for a vegetable stand, so my *Print Power* signs are text-only. Although I might wish for a graphic now and then, it's much more important to have several sign sizes and shapes to choose from. The slowness, while annoying, is something I can live with.

And Signmaker?

Signmaker is a shareware program written by Jeff Colehour in 1987. The latest incarnation, version 1.3, is available on GENie (file #3313), CIS (Library 4, SGNMKR.ARC), and various other PD software sources. Older versions are floating around, too, but be sure to get version 1.3. It has the most features. *Signmaker* requires an XL/XE, a drive, and a Star SG-10 compatible (in the two graphic densities used) printer. That would include most Epson-compatibles. It is written in compiled Turbo BASIC, so it needs a DOS compatible with that language. I use DOS 2.5 and occasionally, MYDOS. A large RAMdisk, while not essential, is certainly helpful. I use Tim Patrick's SmartRAM 2.5 from the July 1989 *Antic*.

Signmaker is designed to make 8 1/2 x 11 inch Signs and flyers. It will print one copy each of two *Print Shop* icons, in one of four sizes, and uses up to three Atari Graphics 0 fonts per page, in any of 4 sizes.

Signmaker Signs are laid out using a reference grid of 100 lines by either 60 or 120 columns, depending on the print density used. Icons may be placed anywhere on the page, using coordinates based on

this grid. They may overlap each other, but do not merge with each other or with text. If overlap occurs, icon #2 will appear on top, followed by icon #1, with text on the bottom.

Signmaker is particularly well-suited for creating detailed signs and flyers, and for the smallest signs. Its smallest text size allows up to 100 lines of 120 characters each-a lot of text for a sign. As with *Print Shop* and *Print Power*, many of the restrictions of the program can be overcome by careful planning and repeated printings on the same page. *Signmaker's* grid structure makes the planning stage much easier than for the other two programs.

Version 1.3 has three features not present in the original version that also aren't available with either *Print Shop* or *Print Power*. One of these is a special "double pass" print mode, analogous to a printer's double-strike printing. This not only produces a darker image with a worn ribbon, it also eliminates the thin blank spaces that you sometimes get between print lines caused by uneven paper feeding.

Another feature is a "print preview" mode. This allows you to get a good idea of what your sign is going to look like without actually printing it out. *Print Shop* has no such feature, and while *Print Power* has a quicker "draft" quality print mode, you still have to print it out to see it.

The third feature is the ability to load text from a word processor file. This is especially useful for signs with large amounts of text, as the data input and editor structures of *Signmaker* are rather primitive and difficult to use. Word processor editors are much easier to work with.

Signmaker can save the sign data in an ATASCII file. In fact, this is the preferred mode, as it is the only one that allows editing. This data file is easily accessible by word processors, and once you get used to the structure, it's easier to edit the file that way than it is with the program editor.

We use *Signmaker* for the smallest signs, the kind you put on individual boxes. At least, we use it when we're not in so much of a hurry that we hand-letter the signs with a felt-tip marker. We've also used it to make the inserts for those clear plastic name tags. We don't use it as much as the other two programs, though, as it takes a lot more pre-planning. Also, the largest *Signmaker* text size is smaller and less readable than many *Print Shop* and *Print Power* fonts.

I Have a Dream...







The program that would be best-suited for our signmaking doesn't exist, as far as I know, but I do know what I'd like to see in it. I'd like to combine the features of *Print Shop*, *Print Power*, and *Signmaker*, leaving out the things I don't like, of course. But more than that, I'd like to see those features enhanced.

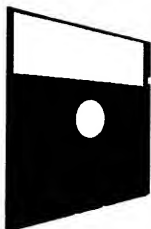
I'd like to have the ability to specify the size of both text and graphics in an absolute measurement, like inches, centimeters, or whatever. I'd also like to see many sizes within the allowable range, so I can pick the right one instead of making do. I'd like to have absolute power over placement, including the size of the leading space (the white space between lines of text). I'd even like to angle my text once in a while.

Every 8-bit program I've ever seen that expands text or graphics does so by simply expanding the size of the pixels. In the larger sizes this method produces very jagged lines where smooth curves ought to be. I'd like to print large text and graphics without "jaggies."

I'd like to see drivers that take full advantage of the widest possible range of printers-old and new, 9-pin, 24-pin, inkjet, and even laser. I might own one of these one day, and I'd like to be able to use it.

All this is a tall order for an 8-bit system, but I believe it's possible-if the right programmer works on it. There are those who would say, "If you want to do all this stuff, why not move on to a different platform that already CAN do it?" Well, that's not an option for me, at least not for now. You see, most of all, I want to do it with an 8-bit.

	<h2>Time Savers!</h2>	
	EPSalot™ --9 disks of Illustrator PD clip art in EPS (PostScript) format for use with PageStream 2.2 and other desktop publishing programs. 267 images, 16 page directory--\$39.95	
	FontFarm™ --A collection of decorative, display, and artist fonts for use with desktop publishing programs. PageStream fonts include DMF, 24H, and FM files, and work with PageStream 1.8, 2.1, and 2.2 (PostScript with 2.2 only). Also available for Calamus (CFN). 52 PD fonts, 4 disks, 28 page directory--\$39.95	
	LogoLibrary™ --598 printer's logos for business cards, advertising, stationery, and desktop publishing. In addition, there are 442 symbols and graphics for charts, posters, shirt designs and signs. All images are hi-res (300 dpi) IMG format for PageStream, Touch-Up, etc. Six disks, 72 page directory--\$39.95	
	Qwikforms™ --127 forms and layouts for PageStream. Includes business forms, page layouts, legal forms, certificates, calendars and much more. Four disks, 40 page directory--\$39.95	
	Templicity™ --112 home, real estate and small business spreadsheet templates for users of LDW Power or VIP (specify which). Includes interactive tax templates for 1992--\$39.95	
	Cliptomania™ --10 disks of hi-res IMG clip-art. Categories include Advertising, Animals, Cartoons, Fantasy, Holidays, Letters, People, Restaurant, etc. 347 images, 28 page directory--\$39.95	
	Cliptomania II™ --10 more disks of hi-res (300 dpi) clip art in IMG format for use with PageStream, Touch-Up, Calamus, Publisher, etc. Categories include Animals, Business, Cooking, Fancy Fonts, Food, Holidays, Party, People, School, Symbols, Travel, etc. 472 images, 36 page directory--\$39.95	
 Same Day Shipping!  To order by mail, send check or money order to: (CA res. add 7% sales tax)  For more information, call: To order by phone, call:	The STerling Connection <i>Quantity Discounts!</i> 5235 Wendell Lane Sebastopol, CA 95472 Any 2 of above--\$69.95 Any 3 of above--\$89.95 4 or more--\$25.95 each Shipping--\$3.00 (USA) All other--\$5.00	



BASIC Diamond Mouse

Kevin Packard

(CIS: 71777,23)

In the June '93 issue of *Current Notes*, I mentioned that it was possible to program *Diamond GOS* applications in Atari BASIC. This month, I will shed a little light on how to do just that. With a little help from my examples, which are available on GENie and CompuServe, you'll be accepting mouse inputs from your Atari BASIC programs in no time. Here's the skinny:

Diamond and BASIC

On the machine language level, the 6502 chip has the ability to address memory with 8-bit or 16-bit addressing modes. The 8-bit mode (Page 0 addressing) can manipulate the first 256 bytes of memory and 16-bit addressing is required to access the rest. The advantage of using Page 0 addressing is speed. It requires less time to move 8 bits into the address lines of the 6502 chip than 16 bits, thus saving machine cycles.

This is what makes Page 0 so valuable. Without the additional speed that Page 0 addressing provides the OS, DOS, BASIC and Diamond would run much too slowly. So, the first 256 bytes of memory are reserved for holding critical information that is accessed repeatedly.

BASIC and Diamond are forced to share critical memory locations because of Page 0's finite number of bytes. They share the same locations but for different purposes. Strange things can happen if Diamond checks these locations and finds the information required by BASIC; most of the time the machine will lock up.

Diamond uses memory locations **\$80** to **\$97** to hold information that is passed to the Diamond functions. (Later on in the article, we'll refer to these locations as **W0-W7** and **B0-B7**.) Diamond functions will work if these locations are set before jumping to the Diamond cartridge routine. Unfortunately, BASIC also uses these same memory locations. To make programming Diamond from BASIC possible you need to make sure that neither Diamond nor BASIC tries to them at the same time.

It is possible to keep the Diamond information in place when using the Diamond functions and the BASIC information there for BASIC to use. When in BASIC, you can define a series of memory locations in Page 6 where the Diamond information can be kept. Then you can execute an ML routine also located in Page 6. Once the ML routine is executed, BASIC will not access these memory locations and the ML routine can swap the Page 0 bytes with the Page 6 information. After the Diamond data is in Page 0, the ML routine can

make the actual call to the Diamond Cartridge. Then after the Diamond function has been executed you go back to the ML routine to swap the data again, and finally return to BASIC. Whew!

The Link Programs

Luckily, programs have already been written to accomplish this. I know of two that are ready-made and waiting to be used. Both have good examples of how to call Diamond functions and are worth studying.

DEVELOP.BAS is a file written by Alan Reeves that came on the Diamond Developers disk. This is a bare bones program that contains the location definitions and the USR routine that swaps the data. Your BASIC code is placed between lines **20** and **30000**.

DIABASIC.BAS is a Public Domain (PD) program that does the same thing with some minor changes. The ML routine is contained in the file **DIABASIC.OBJ**. The object file is read and poked into Page 6, all the Diamond functions are defined, and your code is placed after line 60. The only difference in the Reeve and PD ML routines is that the PD program changes the byte controlling extended memory.

Any BASIC Diamond Application program will contain one of these link programs. By deleting any lines that are not essential to setting up the ML routine and defining variables, you have the basic starting point for your programs.

Getting Started

Let's face it, I can't cover the use of all 55+ Diamond functions due to space limitations, and besides, I don't know how to use many of them. I would, at least, like to explain some of the functions so that you can give programming them a try. With the following functions you should be able to animate the mouse pointer from BASIC.

In general, the functions are called by way of **X=USR**(location of ML routine, function number). Most of the functions will require additional information and will also pass information back to you at locations defined as **B0-B7** and **W0-W7**. The **B0-B7** are reserved for passing single bytes of information. **W0-W7** are for 2 byte data ("words" in Assembly language) and for pointing to memory where data can be found. **B0-B7** and **W0-W7** are defined as BASIC variables in Reeve and PD Link Programs. This will become obvious when you look at the BASIC code. When poking addresses into the word locations, remember that the low bit is placed first, then the high. Here's an example:

ADDRESS=ADR(X\$)
POKE W0,ADDRESS-INT(ADDRESS/256)*256
POKE W0+1,INT(ADDRESS/256)

The Functions

INIT (function 0) will always be the first one called before any other Diamond functions are used. It initializes the Diamond system by setting up screen display, mouse handler and memory handlers. Set **W0** to **0** or **1** before making the call—**0** for the high resolution screen mode (**GRAPHICS 8**) and **1** for a low resolution 4 color mode.

MOUSEON (function 11) and **MOUSEOFF** (function 12) are used to turn on and off the mouse pointer. These routines don't require any data to be passed to them.

DEFMOUSE (function 13) is used to change the shape of the mouse pointer. Place the address where the bit map shape data can be found into **W0**. The mouse shape is formed the same way that a character is defined, preceded by two bytes defining the hot spot. The hot spot is the bit used to determine exactly where the mouse is pointing. **0,0** will use the upper-left hand corner of the mouse and **7,7** will be the lower-right hand corner. Anywhere within these limits can be defined as the hot spot. There are many pages in magazines and books devoted to the subject of character set definition. If you need help please refer to them.

**DIM NEWSHAPE\$(10):NEWSHAPE\$=2 bytes hot spot
and 8 bytes character data**

W0=Low byte of address
W0+1=High byte of address

EVENT (function 23) checks the Diamond environment to see if an event has occurred. An event being a mouse click or a keyboard entry. A whole article could be devoted to this function. I mention it here so you can use it for program control. It receives no information and returns codes for various events at location **39571** (called **EVENTTYPE**). You can call this function and then **PEEK(39571)**. If anything other than a zero is returned, an event has occurred. This function does not wait for an event; it simply updates **EVENTTYPE**. Program flow is up to you depending on the results.

EXIT (function 1) is used to end a Diamond application. It will close any open windows, remove icons, and remove the menu bar before sending you back to BASIC. It requires no information and will return none.

Conclusion

These six functions and the BASIC link programs should allow you to manipulate the mouse in your own BASIC programs. Try changing the mouse shape or flip through several shapes to create an animated mouse pointer. Example programs that do just this can be found in the file called **DIAMOU.ARC** on GEnie (File #6692) and on CompuServe (in Library 14). Happy Diamond BASIC programming!



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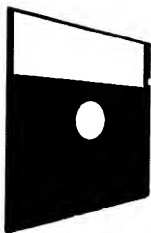
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TransKey IBM Keyboard Adaptor

More Than Just a Failed Keyboard Replacement

By Michael W. Todd (GENIE: S.SNYDER10)

I don't know if most Atari owners are anything like me, but every so often, as I'm sitting here at my desk, banging away at my trusty 8-bit, I sometimes wonder how much life is really left in my keyboard. I'm sure you've heard the horror stories about switching on the computer and finding the 5, T, G, and B keys no longer working. You dread the thought of random keys quitting, space bar and cursor keys long worn from game play operating whenever they feel in the mood, or worse, the whole keyboard quitting in the middle of a project.

Sure, there are a number of keyboard repair text files on the various networks that still support our 8-bit systems. Others can be found in local 8-bit libraries. Cleaning the contacts, repainting the traces, and replacing the mylar are but a few of the standard solutions. Of course, you could just call one of the remaining Atari parts suppliers and order a replacement keyboard, but you'd still be vulnerable to the same thing happening again. And once the supplier's stock is gone, what's left? Used keyboards? Right, you know how hard you can be on a keyboard. It's a sure thing the previous owners of those keyboards have been just as hard on theirs. So, what do you do?

Enter Micro Solutions

Sometime in late 1989, Michael St. Pierre, President of Micro Solutions, must have had similar thoughts cross his mind. There already existed a plentiful and inexpensive supply of replacement keyboards for the IBM PC. Every indication was that these keyboards would be in production long after the last Atari replacement keyboard had been sold. So, the solution was really quite simple, create an interface that would allow the Atari and PC keyboards to communicate with one another. Simple may be a relative term, because what came out of his thinking was the microprocessor translator we now know as the TransKey.

Version 1.1 of the TransKey interface was released in June 1990. A number of ROM upgrades followed as the TransKey was upgraded to support more functions of both the IBM XT style keyboard and the Atari. Naturally, as you would expect in a community such as ours, there shortly followed a number of articles describing how, with a TransKey installed, an 8-bit owner could mount his motherboard, drives, and hard drive interface within an IBM style case. Micro Solutions sold the TransKey up until April 1991 when the

rights to the interface and existing stock were sold to Chuck Steinman of DataQue. Shortly after DataQue acquired the rights to the TransKey, a final upgrade to the ROM and a minor upgrade to the hardware was completed by Michael St. Pierre and version 2.4, the current version, was released in June 1991.

The TransKey

The TransKey can be had in a number of configurations depending on whether or not your motherboard is socketed or unsocketed and the amount of flexibility you want. The TransKey itself is a 2.5 x 3.5 inch interface board that fits snugly beneath the RF shielding of most Atari computers. However, owners of 1200XL's are warned in the documentation that they'll likely have to remove a portion of the RF shielding in order to fit the TransKey. Options include an inline keyboard connector that can be routed through any opening in the Atari's case, or a chassis mounted keyboard connector that requires the cutting of several holes in the case for mounting.

Depending on whether or not your mother board is socketed, you have the option to choose the plug-in or solder-in POKEY connector. The plug-in version comes with an adapter board that fits neatly between the POKEY chip and its socket. The solder-in version requires that 10 connections be made to the POKEY chip itself, and both versions require that 3 connections be made to the GTIA/CTIA chip as well and one connection to the computers reset circuit.

You have your choice of two memory configurations. The first is the 6116 static RAM (SRAM) that, if you make much use of the TransKey's built-in macro feature, must be reprogrammed each time you turn your computer on. The second, and, in my opinion, best option is the zero power RAM (ZRAM). Having the ZRAM option allows you to have both your user defined macros and default keyboard configuration available whenever you turn on your computer.

Installation

Here's where you normally find out just how good the documentation for the piece of hardware you've just gotten really is. More often than not you're likely to find things, obvious to the author of the documentation, either vaguely written or left out all together. I was pleased to find that the documentation for installing the TransKey was excellent. The many dia-

grams and tables included in the documentation clearly showed the locations of all required connections needed for the various Atari computers. Installation of both socketed and solder-in versions were fully covered to the point where even an average hardware hacker, like myself, could easily install either version. Already having a 130XE where the POKEY was socketed, thanks to past hardware hacks, I was spared all but four solder connections. Even so, installing the TransKey took only 30 minutes, and most of that time was spent fitting the TransKey board itself beneath the computer's RF shielding.

When it said in the documentation that the TransKey fits snugly beneath the RF shielding, they really meant it. It does take some trial and error to fit the TransKey board and connector ribbon beneath the shielding, but it can be done. The in-line keyboard connector can exit the computer through any small opening in the case and can therefore be located anywhere you want it to be. Of course, if you wanted a cleaner look, you could always opt for the chassis mounted keyboard connector; a little bit more work and a bit more limited in the choice of mounting locations, but it looks a lot nicer than having a connector ribbon hanging out the side of your computer.

There's been one minor hardware modification to the TransKey since its release. On some systems, once the TransKey interface has been installed, the existing Atari keyboard goes dead. It's not a problem if the keyboard in question has gone bad anyway, but what if you just wanted to have the option of using either keyboard. The fix is simple; remove the wire connecting pin 25 of the POKEY to the TransKey and install a 1k ohm 1/4 watt resistor between pin 25 and the end of the wire you just disconnected. A text file describing this modification was posted by DataQue to both GENie and Compuserve.

The TK-Freeze

Not long after DataQue acquired the TransKey from Micro Solutions, Michael St. Pierre began looking into an interesting problem users were running into while using the TransKey. It seems that the PC-style keyboard requires several seconds to do a self check during which time pressing any key will generate an error. But what about programs that require you to disable BASIC i.e. hold down the OPTION key while booting. In order to load this kind of program, you had to go back to the original Atari keyboard and disable BASIC from there. This defeated the purpose of the TransKey itself. Looking for a solution to the problem, Michael adapted a hardware project originally done by Bob Woolley called the FREEZER. With a TKFREEZE installed, a user could custom set a delay between the time the system was turned on and the time when the computer began to

boot. In addition to providing the required time for the PC keyboard to do its self check, one could set the TKFREEZE to allow enough time for a hard drive to spin up to speed as well. A blinking LED let the user know when it was safe to press the option key and disable basic.

The TKFREEZE is not part of the TransKey from DataQue, but is a separate hardware project that should only be undertaken by someone who is well versed in reading electronic schematics and who possesses very good soldering skills. A text file describing the TKFREEZE, its circuit and installation can be found in most 8-bit libraries.

In Operation

If after reading all the above, you're still thinking that the TransKey is just a "One for one" keyboard replacement, you're wrong. There are a number of functions built-in to the XL/XE series computer that were not implemented in its keyboard. Those of you with 1200XL's and the rare few with 1400 and 1450XL's know what I'm talking about. The 1200XL and its rarer cousins have four function keys, which control such things as cursor movements, the audible keyboard click, switching between the standard and international character sets, and the ability to turn the screen on and off to speed up processing. With a TransKey installed, any XL/XE computer now has access to these same functions as well. As in the 1200XL, a simple CTRL-F3 gets rid of the keyboard click. For up to 30% faster processing, CTRL-F2 disables ANTIC screen DMA. Any other keystroke or, for you Diamond GOS users, mouse inputs will re-enable screen DMA. Sadly, these functions as well as the additional cursor movement functions provided by the TransKey, are not available to owners of the original 400 and 800 computers. These extra function keys were never supported by the original Atari operating system.

Macros are one of the TransKeys' more useful additional functions that are supported on all Atari computers. Four tables of eight macros up to 256 characters each can be defined and saved by the user. At the touch of an F-Key, any one of the eight macros can be executed. Switching between the macro tables is as easy as pressing SHIFT F1 through F4. Having the ZRAM option is particularly nice, as you'll always have your custom macros available whenever you switch on your computer. If you're already familiar with the macro features found in *BOBTERM*, you'll already have an idea of what can be done with the TransKey macros. Each macro can be a string of commands that can include carriage returns and special control characters. However, the TransKey's macro function does not support pauses or timed delays similar to those found in *BOBTERM*. With 64 macros

available you can store more than just commands. You can store common phrases, addresses, formatting commands and headers, just to name a few. In fact, the TransKey comes with the fifth and sixth macro tables already pre-programmed with common programming commands and phrases used by BASIC and MAC65 programmers.

The Keyboard

One of the things about a stock Atari keyboard that I've never liked is the location of the BREAK key. Too often, when I've meant to press the BK-SP key, I've ended up hitting the BREAK key. A nice thing about using a PC keyboard, other than the solid feel of the key stroke, is that the BREAK key is located away from the main typing area. Now, the PC keyboard doesn't have a reset key per se, however, the TransKey does support a warmboot key sequence similar to that found on the IBM. Pressing the CTRL-ALT-DEL keys appears to the Atari's OS the same as if you'd pressed the RESET key. The TransKey's documentation covers alternate key combinations to generate a reset for several of the alternate OS's available for the Atari. Another plus to the PC style keyboard is that you're no longer tied to your computer. Having a separate keyboard gives you the freedom to locate it and your computer anywhere you want. I've found it very enjoyable to set the keyboard in my lap, lean back in my chair, and work in a far more relaxed position.

It takes almost no time to get used to thinking of F9 through F12 as your START, OPTION, SELECT, and HELP keys. Never again do you need to hit two keys to pause a scrolling list on the screen. Hitting the SCROLL LOCK key on the PC keyboard now does the same job as pressing CTRL-1 on the Atari Keyboard. The TransKey does provide one option that's normally only available to SpartaDos 3.2d users, the ability to recall the most recent string of commands typed between the last two carriage returns. TransKey supports a keyboard buffer of up to 254 characters that can be recalled by a simple CTRL-F6. And, if you do a lot of numeric entry in your programming, having the 10 key pad will spoil you rotten. The 10 key pad and cursor keys found on the PC keyboard may not always seem to work right; this depends mostly on how the programs you're using map the keyboard. In programs like *BOBTERM* and *DDT* you have to use the = and / keys to move up and down the menus rather than using the cursor keys. So there's some relearning you might need to do with the programs you most use. You need to watch for what "key" your program really expects to see. Shift-2 on the Atari, the quote, is not the same as Shift-2 on the PC keyboard, the ampersand. Watching out for these lit-

tle things will help you quickly work through any problems you'll have with some programs.

In Conclusion

After having spent more than a year using the TransKey and PC keyboard, I find it a bit odd returning to the soft feel of the stock Atari keyboard; I really miss having those F-Key and macro functions available at my finger tips. There are some functions of the Atari keyboard that are not supported by the TransKey and are described in the documentation. Though I've never run into them myself, there are some SHIFT-CTRL combinations that cannot be read by the TransKey.

Over all, the documentation is well written and seems to clearly cover all the things an average 8-bit user would want to know. DataQue does include some information in its documentation on how to permanently modify the macro tables in the TransKey's Eprom, but that's really more for the advanced hacker/programmer or those who've opted for the SRAM option. You may have to look over the sections covering the keyboard and macro commands a few times, but overall the commands are simple and easy to learn. The TransKey board, itself, is a well built, easy-to-install piece of hardware that provides a number of new functions to the Atari as well as a lot of flexibility. The way the PC keyboard is mapped under the TransKey allows for a fast and easy transition between one system and another.

If your keyboard does go bad or if you're just looking for a better keyboard, maybe you should look into adding the TransKey to your Atari. It does cost a little more than a stock replacement keyboard. However, I believe that the added features, convenience and availability of replacement keyboards make the TransKey well worth the cost.

The various TransKey configurations and prices are as follows:

TransKey 2.4

Solder-in, inline kb jack, SRAM	\$51.00
Solder-in, inline kb jack, ZRAM	\$61.00
Solder-in, chassis kb jack, SRAM	\$51.00
Solder-in, chassis kb jack, ZRAM	\$61.00
Plug-in, inline kb jack, SRAM	\$62.00
Plug-in, inline kb jack, ZRAM	\$73.00
Plug-in, chassis kb jack, SRAM	\$62.00
Plug-in, chassis kb jack, ZRAM	\$73.00
AT style 101-key keyboard (purchased with any TK)	\$60.00

All orders should include \$4.00 for shipping and handling within the US, and an additional \$5.00 elsewhere. For further information, please contact Chuck Steinman at: Lex-Tronics/DataQue, 1623 West Fourth Street, Mansfield, OH 44906-1701. Voice/Fax (419) 529-9797 1pm-5pm M-F. GENie: dataque.1.



Notator LOGIC

Recently, I had the opportunity to speak to **Gerhard Lengeling**, one of the programmers for *Notator LOGIC*, and **Bob Hunt**, the Technical Support person for *EMAGIC*, concerning their new sequencer. It is currently running on the Macintosh and Atari, and will shortly be up on the PC platform. The program is almost a complete reworking of *Notator SL*, adding many new features and refining many others. I spoke to Gerhard briefly then Bob took over the remainder of the interview.

Gary: *Notator seems to have a three dimensional approach to sequencing. How did you arrive at this approach?*

Gerhard: There are several ways to structure a song. There is the Pattern Based concept, like the old drum machines, and the linear approach. We tried to find a more general way of structuring the program; this is how we came up with the folder concept. The result is, you can think of *Notator LOGIC* as a *Notator SL* that is Pattern Based, but with the added advantage that each pattern is able to do the same thing as a linear program. This means you can be completely linear and two dimensional, or you can pack the whole thing into a folder so that it becomes a new entity. The analogy is simple, you can put your data in a folder, and the folder has the same behavior as a single sequence. You can copy it, or drag it, or however you want to manipulate it.

(**Bob Hunt** then got on the line)

Gary: *Included in the package with Notator LOGIC for the Atari is an interface called Log 3. Could you tell me about it?*

Bob: The Log 3 doubles as our copy protection key for both *Notator SL* and *Notator LOGIC*. Also, it's an expansion device which provides three discreet MIDI Channel Outputs. There is a fourth physical output, which doubles one of the three outputs like an internal "Y" cord or Thru Port.

Gary: *What's the copy protection device on the Macintosh?*

Bob: It's a Pass Thru Key that plugs into the Apple Desktop Bus Port, usually referred to as the ADB Port.

Gary: *What about the other MIDI expansion or peripheral devices for the Atari?*

Bob: We still make the Unitor and the Export boxes but not the Human Touch or the Steady Eye Sync devices. All these products will still work with *Notator SL*, but only the Unitor is supported by *Notator LOGIC*.

Gary: *Is Notator LOGIC a totally new piece of software rather than an update from Notator SL?*

Bob: There are some paradigms from *Notator SL* that have come over, but generally it's a new program. What happened is that, in order for us to do the things that we wanted to do, it was necessary to do a complete rewrite rather than to continually add new features to *Notator*. I think many other companies have made the mistake of adding too many fea-

tures to an original foundation that wasn't necessarily conceptualized to handle those new ideas. I really respect our programmers for knowing when to move on and start from scratch again. Of course, this creates a situation where you must convince your old supporters that the new way really is a better one, but this hasn't been too difficult because *LOGIC* is so amazing.

Gary: *What has been the biggest hurdle in convincing them?*

Bob: Probably the biggest hurdle that we're dealing with is that there are still a few rather important Score elements that are missing from *Notator LOGIC*. Fortunately, most of these things have been addressed in version 1.7, which will probably be the shipping version by the time this interview comes out. Any remaining issues will then most likely be dealt with in version 1.8 or 2.0, which should be available 1st or 2nd quarter of '94. This situation has certainly served to educate us as to how many of our users used *Notator* for its Score features. Those are usually the users who have disappointments; the sequencing people, mostly, are thrilled.

Gary: *The Arrange Window is the first one a user sees. What are the component parts and look of this area?*

Bob: The Arrange window is where most users will do most of their sequencing. The main area displays rectangular objects which are virtual representations of your sequences. These objects can be

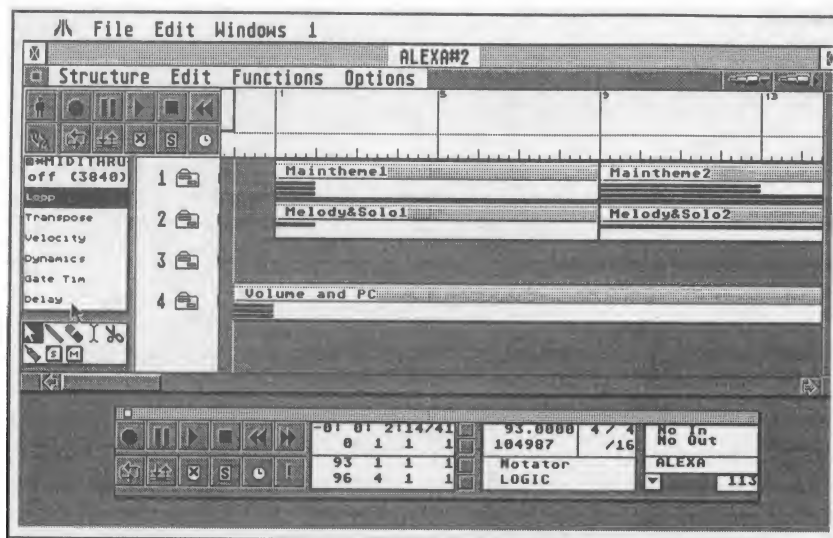


Figure 1: The Arrange Window

easily edited with a set of software tools. They can also be grouped together into a folder object, which allows you to easily manipulate and edit large blocks of data. The window also contains a standard Transport Control in the upper left hand corner. The Bar Ruler, which provides a simple and clear time axis, runs across the top of the window. The Song Position Line stretches vertically down across your sequences and moves left to right to clearly show you your current position within the song. It can also be dragged as a quick and easy way to position yourself in a song. In the left hand column you have two Parameter Boxes. One contains your Playback Parameters, which are similar to the Track Parameters Box in *Notator*, in which you can perform various non-destructive edits to the events in your sequences. The other Parameter box is your Instrument Parameter Box, which is where you control the MIDI data flow.

Gary: What are the capabilities of the Playback Parameter Box?

Bob: Like in *Notator SL*, there are six areas that can be manipulated; Quantizing, Looping, Transpose, Velocity, Dynamic, Gate Time, and Delay. A big improvement over *Notator SL* is that now these Playback Parameters are not just for

the entire track; they can be applied to each individual sequence. It's, therefore, very easy to quantize one sequence on a track in one way, and another sequence in a completely different way, even when they reside in the same track. There is also now an "Extended Playback Parameter Box" that can be opened. It allows you to finely control the Strength and Range of the Quantization and even the exact percentage of swing; and remember, all this can be done in real time and non-destructively!

Gary: Tell me about Dynamic Compression and Expansion.

Bob: The Dynamic Compression takes all the velocity values from the chosen sequence and averages them out to the desired percentage level. The Expansion does the opposite, making the louder notes louder and the softer notes softer.

Gary: Tell me more about the Folders concept?

Bob: Everything in the program follows the same Mac or Atari-like hierarchical structure. In terms of the Arrange Window, it means that you can take a group of objects and combine them into a folder, then apply those playback parameters to all the contents of the folder. Also, all the Editing Tools can be used on that folder as well.

Gary: What are some of the edit tools available in the arrange window?

Bob: The basic tools are the Pencil, which is used for creating a Sequence Object, the Scissors, which are used to divide objects, the Glue Stick, which is used to combine objects, then the Solo and Mute tools.

Gary: You have a unique way of handling the Transport Controls, even allowing for multiple Transports on the screen.

Bob: In many of the windows there is a transport that is part of that window, which can be hidden if you choose. The other type of transport is a floating window, which is always on top, so that none of the other windows can blank it out. It can be placed and sized however you desire. Also, that floating window transport can be flipped to a giant SMPTE display. The programmers are simply trying to provide the user with as many ways to control their working environment as possible. The whole system with the Screen Sets, and the Multiple Telescoping Windows, allows the user to become part of the design process.

Gary: What is the resolution of the sequencer?

Bob: 960 pulses per quarter note. It's basically double what *Notator* was and a greater resolution than anything on the market.

Gary: What about the Tempo Range?

Bob: The range is from .0500 to 9999 beats per minute. Not only does that represent an incredible range, but the 10,000th of a beat resolution can be very useful, for example, when precisely adjusting your tempo to exactly match a long sample loop.

Gary: The *Environment Window* gives the user a virtual representation of their MIDI Studio. What are the component parts?

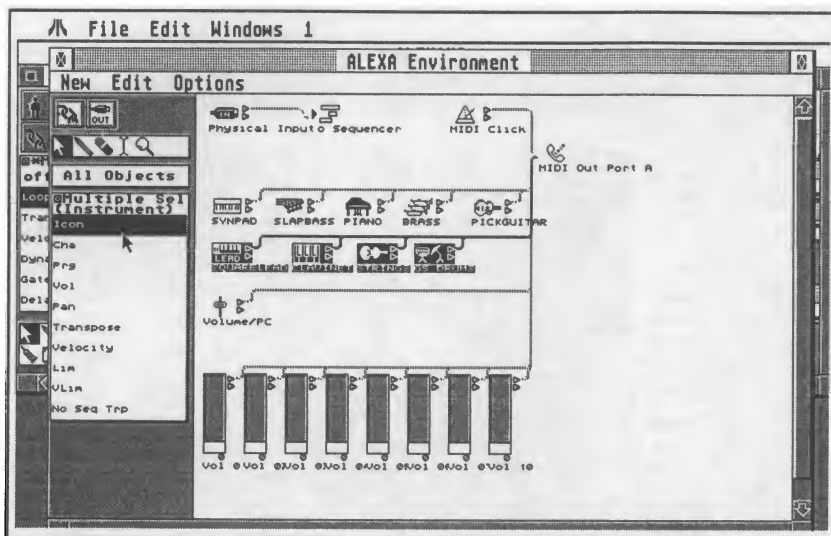


Figure 2: The Environment Window

Bob: The Environment Window has several different levels of potential use. Throughout *LOGIC*, the programmers tried to look for ways to reduce the number of tasks that a user has normally had to repeat every time he created a new sequence. A basic use of the Environment Window illustrates this concept. For example, before recording a track in most other sequencers you have to A) Assign a MIDI Port, B) set what MIDI Channel it's going to, and C) insert a Program Change command into the sequence so that the right patch comes up the next day when you try to run that song. With *LOGIC*, the user conceivably only has to do this once, because instead of assigning these settings to a given track, he is defining what we call an "instrument." These instruments can then be saved as part of an automatically loading template, making them available every time you start a new song.

The next level of use for the Environment Window is to create combination instruments that utilize multiple devices in your MIDI system. It gets even more interesting when you start using some of the special instrument devices that are available in this window. For instance, there's the Mapped Instrument device which allows you to Map any pitch to any other

pitch, or even any pitch to any port or cable. You can also use it to give each pitch an individual name which will then appear in the event list instead of a pitch name. The primary use of this special instrument might be to set up a Drum Kit which utilizes different drum sounds from different MIDI devices. Also, there is a Multi-Instrument Device which allows you to set up an instrument which represents one device in your system; it then allows you to call up the patches on that instrument by their name. Then, there are devices which do special MIDI effects. For example, there is the

Chord Memorizer, which is used to set up one note chords. There are also the Delay Lines, the Transform Instruments and the Arpeggiator. In addition to the above there is a nice selection of fader and knob devices which can send and be controlled by any MIDI event. All of these instruments and devices can be patched together with virtual patch cables in any conceivable number of combinations. So, really what you see with the Environment Window, is a program within a program. It's been compared to Opcode's MIDI System (OMS) on the Macintosh, but it really goes way beyond OMS with all of the special devices. This part of the program is completely new to any Notator user.

Gary: You have a way for the user to combine many screens, could you tell me about this?

Bob: I'm glad you asked about the Screen Sets, because they're one of the simplest, yet I think one of the coolest new concepts you'll find in the program. You can open up any combination of windows you want to use, size and place them, then hit a number key on the keypad and you have created a screen set. There are 90 of these sets available on the most current version.

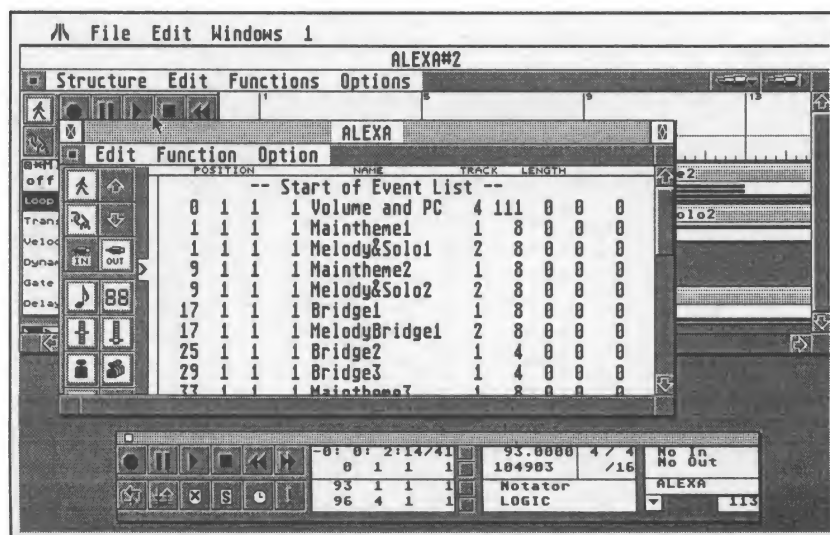


Figure 3: The Event List Editor

Gary: Tell me about the Link Mode?

Bob: You've got something like 6 different types of editing windows, and, with all these different screen setups, you need to have the ability to make choices about how they will interact; that is the purpose of the link mode(s). Basically the setting of the Link mode determines whether the information presented in one window will reflect the current selection in another window.

Gary: One of the primary editors is the **Event List**. What kind of data is manipulated there?

Bob: Any type of MIDI data can be edited here. The Event list provides detailed Alpha-Numeric information about everything in the sequence. That would include the position of the MIDI events, the type of event it is, the MIDI channel, then two data status bytes, which change, depending on what kind of events you are dealing with. One unique aspect of LOGIC is that the Event List displays the events at different hierarchical levels. This means that, instead of viewing the actual MIDI events that are in your sequence(s), you could be viewing/manipulating the sequences or folders which make up the arrangement.

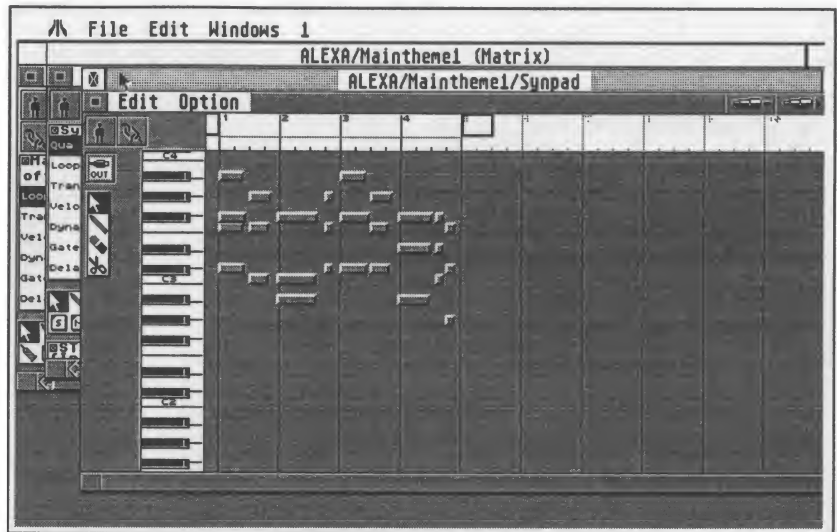


Figure 5. The Matrix Editor

Gary: **Hyper-Edit** is another feature of the sequencer. How does it look?

Bob: Hyper Edit displays the MIDI events in a special graph-like format. Each event is displayed as a vertical beam whose height is determined by the value of that event. For instance, for notes it will represent the loudness of the notes.

Gary: What are some of the uses of Hyper-Edit?

Bob: It is ideal for editing or generating Controller events such as Volume, Panning, Pitch Bend, etc. It can also be very effective as a Drum Editor. Drawing in per-

fect 48th note flams on snare hits is one thing I personally enjoy doing in Hyper Edit.

Gary: The **Matrix Editor** is another feature of LOGIC. What's the difference between it and Hyper-Edit?

Bob: They are really quite different. The Matrix Editor is a Piano-Roll editing environment. It's used primarily for changing the pitch, position and length of notes. I say primarily because currently, we also allow you to change the velocities of selected notes with a special tool.

Gary: The **Score Editor** has always been a strong feature of Notator. Tell me about what's new and what's old in LOGIC?

Bob: The main thing that is new is that you have a lot more flexibility and control over how you are going to work with your Score. For example, Notator was very rigid when it came to how much of your score it would allow you to see and work with at one time. You could only view at most three or four staves, and there were only two different choices of staff size. In LOGIC the whole structural foundation has changed. There are telescoping functions which allow you to telescope the score down to the size of your thumbnail, or zoom in

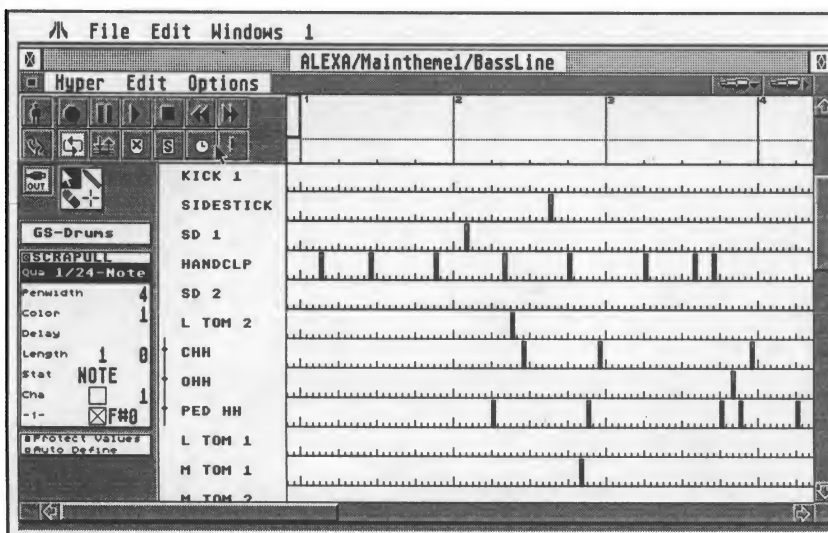


Figure 4. The Hyper Editor

on it until a note is just about filling your screen.

You can choose just about any number or combination of instruments to edit, and you can edit within a Print Preview Mode, which is something you couldn't do before. On the old side, there are still many of the same algorithms for interpreting your performance, such as the Interpretation, Syncopation, and Overlap Correction Modes.

Gary: *There seem to be some features lacking in the Score Editor. When will they be implemented?*

Bob: By the time this is published Notator LOGIC 1.7 will have been released and many of the needed revisions will have been implemented in that version. The main things that still may be absent are Multi-Bar Rests, and a system for Chord Input. These should be added with 1.8, however, which is due to be released in the beginning of next year. The underlying reason that some of these features are taking a little longer to appear in LOGIC is that the programmer has a desire to enhance the Score editing capabilities rather than just duplicate what is already in Notator SL. This means that everything that is there should be better than it was in Notator SL. The ultimate goal we have set for the Score Editor is to have 80% of the functionality of Coda's Finale by the end of next year.

Gary: *What about this program on the PC platform?*

Bob: By the time this is published, there should be already available a scaled down version of the program for the PC called Micro-LOGIC that sells for under \$200. It will be missing the Environment Window and the Hyper Edit Window, but beyond that it's basically the same program.

Gary: *What about a release date for the full featured PC version?*



Figure 6. The Score Editor

Bob: For the full featured model we're looking at 2nd quarter of next year.

Gary: *Anything you'd like to add?*

Bob: EMAGIC is looking forward to building on the software revolution that we began with Notator. With Notator, the revolution was in the integration of sequencing and scoring in one package. With Notator LOGIC, you are seeing the expansion of that original vision of the software workstation.

We began by redesigning the interface to give the user exceptional flexibility and control over the environment in which he creates. It was important that the underlying foundation be very open ended, in a way that would allow us to easily expand the program's capabilities in the future, as a result of either software or hardware innovations. For this reason, it was also imperative that the design could be easily ported between the popular computer platforms.

Next, we wanted to add two other elements that were not a part of Notator. First of all, a virtual MIDI environment called the Environment Windows, which would provide an unprecedented level of software control over an entire MIDI studio. Secondly, we wanted to seamlessly incorporate Digital Audio into the over all sys-

tem. With LOGIC Audio for the Mac we've already done this, and in a big way. It is the first to be capable of running up to 16 channels of Digital Audio (on the Macintosh with the necessary Digidesign hardware); it is the first to give you realtime, non-destructive Parametric EQ, and it is the first to include a realtime Stereo Source Sample Editor right on-board! (Atari users need not worry, we will be introducing LOGIC Audio for Falcon and PC clone consumption within the first quarter of next year.)

With all of this, I believe that EMAGIC is poised and ready to take on the future, wherever it may lead. I hope that there are plenty of your readers who are willing and eager to go there with us. I think it will be an exciting and rewarding journey!

Notator has always been a great program, and this reworking makes it even better. The retail price is \$699, but I have been quoted prices as low as \$475. For more information call: Bob Hunt, 415 738-1633, FAX 738-1668.

For any questions or suggestions please don't hesitate to call, write, or FAX me: Gary Woods, 6428 Valmont St., Tujunga, CA 91042. Phone: 818-353-7418; FAX 352-6559.

Atari in the STicks

Henry K. van Eyken

To Kiss A Worm

A Tale of Mystery and Imagination

XXXXXXXXXXXXXX

*Entia non sunt multiplicanda
praeter necessitatem*

— William of Occam
(~ 1280—1349)

For years we have courted our computers and time has come to consider serious commitment. Microchip wedded to human brain may seem farfetched to some people, but I believe it is not only feasible, but reasonable. I would go further still: it is desirable and, maybe, even necessary for the perpetuation of the human race.¹ Oh, sure, before us are some weighty matters that require careful contemplation, and this month we shall look at some of them, such as compatibility and fidelity and the kind of family we might be marrying into. Then there are the usual concerns about mutual complementarity and understanding, but those will be reserved for another time.

As for believing in the feasibility of a mind-chip partnership, I can hardly find more respectable company. A quarter of a century ago, Allan Kay joined the Palo Alto Research Center of Xerox where he organized the Learning Research Group to implement a vision of interactive computing around a device named *Dynabook*. It was to be a

personal dynamic medium the size of a notebook, which could be owned by everyone and could have the power to handle virtually all of its owner's information related needs. It would respond to questions, it would have enough capacity to store anything the owner would like to remember, it would have high-quality video and audio output, and it would have enough power to respond instantly.²

Much, but not all of this sounds pretty mundane today, but, lest we forget, at that time the now so ubiquitous personal computer and laptop had not yet arrived. Kay worked on both the hardware and software aspects of a truly *personal* computing. The computer language *Smalltalk* stems from his project as do the key-and-mouse driven desktops so dear to owners of Macintosh and Atari ST computers, and now increasingly also to those macho-ists with IBM compatibles.³

While Kay struggled with the implementation of his *Smalltalk* system, astronomer Carl Sagan engaged in some small talk of his own. In his 1977 book, *The Dragons of Eden*, he wondered if it would be possible to add some day

a variety of cognitive and intellectual prosthetic devices to the brain—a kind of eyeglasses for the mind. This would be in the spirit of the past accretionary evolution of the brain and is probably far more feasible than attempting to restructure the existing brain. Perhaps one day we will have surgically implanted in our brains small, replaceable computer modules or radio terminals which will provide us with a rapid and fluent knowledge of Basque, Urdu, Amharic, Ainu, Albesian, Nu, Hopi, !Kung, or Delphinese; or numerical values of the incomplete gamma function and the Tchebysheff polynomials; or the natural history of animal spoor; or all legal precedence for the ownership of floating islands; or radio telepathy connecting several human beings, at least temporarily, in a form of symbiotic association previously unknown to our species.⁴

Sagan's train of thought took off from a report on "successful" work in creating direct communication between a chimpanzee's brain and an electronic computer.

The full development of a Saganesque meeting of minds probably needs a while in the coming and that is just fine with me; it can't come late enough. Better for now to let our fingers do the talking. Or the tip of a plastic cap on a ballpoint, which is a fairly convenient tool for pressing the 5/32-inch (4-mm) keys of my tiny Sharp *PC-1261* pocket computer.

Those who find many small keys crowded together a painful problem might seek such solution as the *Microwriter* keyboard. An English invention of some years ago, it has five unmarked keys whose many possible combinations of pressings ought to give a tiny Fleabyte plenty to ponder. I prefer to envision a small sphere in the palm of either left or right hand, at will, for addressing a computer as readily during the din of day as in the still of night. Unobtrusive

¹ (e.g.) vE, "Orality, Literacy, Computency." *Current Notes*, Sept. 1993, p.32.

² Original gone astray. Poltergeist at work.

³ Naomi S. Baron, *Computer Languages: A Guide for the Perplexed*. Anchor Press/Doubleday, 1986, p.357ff.

⁴ Carl Sagan, *The Dragons of Eden*. Ballantyne Books, 1986.

communication that leaves one hand free for other tasks.

In Simplicity We Trust

No. The pocket computer's tiny keyboard is not my major worry. Far more serious an obstacle—a potential catastrophe, come to think of it—is accelerating obsolescence that comes with progress. And then there is the harm too frequently done by one program to another one. If we are to rely on supplementing our neural brain with artificial circuitry, we want to be certain that the part of our mental assets relinquished to a Fleabyte's care will not be in jeopardy either by accident or consequential to the updating of components or methods.

We must be confident that what has been programmed in one language can be readily read by, or transposed into another, more up-to-date one. The latter's structure may quite possibly differ much from the one in current use though we do anticipate that computers will help us take the strain out of lifelong learning about machine computation as much as we expect them to help us with other mental tasks we must cope with. The problem of downward compatibility will revolve less about older application software functioning with newer chip designs than it will about the need for lifelong preservation of data and their consistent interpretation. Inconsistent interpretation would shake the sense of equilibrium and lead to serious psychological disorders within the neural partner. A minimum level of dependability is clearly a must.

We must be certain, also, that information exchange via, to, and from computers and storage devices will be readily and cheaply adaptable to more-up-to-date or replacement tools, and, further, that the flow and quality of information won't be tampered with by those with less than noble, if not outright evil, designs.

Fleabyte's mental assets, accumulated over years of programming and assembly, and to which our minds will become thoroughly attuned may never be quite as valuable as the assets harbored by our natural brain, but expect them, in a future not too distant, to become a very close second indeed. Assets *that* vital should not be subject to the buffeting forces of progress and to the whiles of commerce.

We want a Fleabyte that can be readily attuned to unexpected, future change. Only if we can rely on this without reservation shall we ever be prepared to entrust a computer with important parts of our mental burden. In the meantime, we must, for all practical purposes, be satisfied with delegating to our pocket computers specific, limited tasks such as those we now assign to an electronic calculator. Later, and gradually, we may expand their scope. It is such a bottom-up approach that, I am inclined to think, peo-

ple should be able to adapt to and seek their furtherance.

Aim of the Game

Computing progresses most visibly in the domains of hardware and software. The quality of life hardly seems to enter into the human resolve to force technological advance. Developments in computational technology are funded for national security first, for financial profits next, and for the advance of the human species not at all.⁵ Such a pity that the potential for a better life is only an accident, a mere byproduct of our human struggle to dominate human affairs. However, if we select as our vantage ordinary everyday life, we perceive that now we need less development of technical know-how and applications, and more attention at the level of human judgement. Technology runs way ahead of our ability to utilize it wisely.

"Atari in the STicks" is about that. I write it like I drive a car: eyes not directed toward what is immediately in front of me, but to where I shall be a second from now and beyond, up to where the road turns from sight. And like any red-blooded driver, I can get riled not a little if my progress is hampered by a vehicle that hogs the road.

The future is not there for big corporations to dominate. Their relationships with us are to be kept symbiotic and should not ever become proprietary. Corporate brass shouldn't ever think of manipulating us. We'd do well to remain vigilantly clear on this point, especially now that electronic and human minds get their wires crossed ever more readily.

The scope of this column is truly personal computing. Computing for self-development is central and, hence, also the effective gathering and assessment of information so that we may arrive at better personal—and, hence, communal—judgements. It is from these, and from a modicum of entertainment, that I seek to pull the major strands from which this monthly weave is woven.

Juggernaut

A few days after last month's "Teradesk at Tuxedo Junction" had gone off to *Current Notes*, I came across a story about bloated software plugging up PCs. Part of a solution to this problem is offered by Microsoft. Its *Windows v.3.1* incorporates *object linking and embedding* (OLE). This facilitates making documents contributed to by different programs. Developers of software to be run under *Windows* no longer need to include services that are already available from *Windows* itself. (*Applets* the *Windows* folk call their small, embedded applications, thereby peeling a rival.) Mi-

⁵ (e.g.) Noah Kennedy, *The Industrialization of Intelligence*. Unwin Hyman Limited, 1989, Ch.5, p.78ff

crosoft aims to extend this approach by allowing mini-programs themselves to be merged:

Fully object-oriented software takes the principle behind OLE one step further. In this context, *objects* are essentially self-contained programs that each perform a single function: drawing charts, editing text, running the operating system. These can be linked as required, with computer users creating their own customized software. No features are duplicated: a text-editing object serves all the other objects on a PC or network.⁶

Examples given are the *Cairo* system and *Oberon*. Microsoft's *Cairo*, due in early 1995, aims to dislodge conventional software within three years. *Oberon*, designed by Niclaus Wirth of *Pascal* fame, is a set of objects teamed to serve as a merge of operating system and application programs.

It all looks neat and proper and in accord with what I wrote a few months ago: "What is needed [in personal computing] is a variety of simple, intuitively used software that cover a lot of ground in flexibly adaptive and agreeable ways."⁷ What I do *not* have in mind is a proprietary system. That sort of *thing* turns too easily into a *situation* and that's good reason for steering clear from it. Clear from *it* and thereby from the kind of overbearing relatives apt to destroy a good marriage. One specific objection: proprietary systems will only grow those capabilities that return profit to their owners and, hence, are likely to ignore individual needs.

Just how much big software companies care about clients who already have anteed up into their coffers may be epitomized by this ghastly story found in Montreal's *The Gazette*:

Some people might like the new Side-Kick version 2 and some of its more fancy features and built-in communications program, but I want to stick to my old, trusty Side-Kick version 1.65A. But recently, I have found some new programs incompatible with this older version of Side-Kick. When Side-Kick version 1 is in memory, these programs crash.

⁶ "When the bloat comes in." *The Economist*, Oct. 1993, p.91.

⁷ vE, "The Personal in Personal Computing." *CN*, May 1993, p. 50.

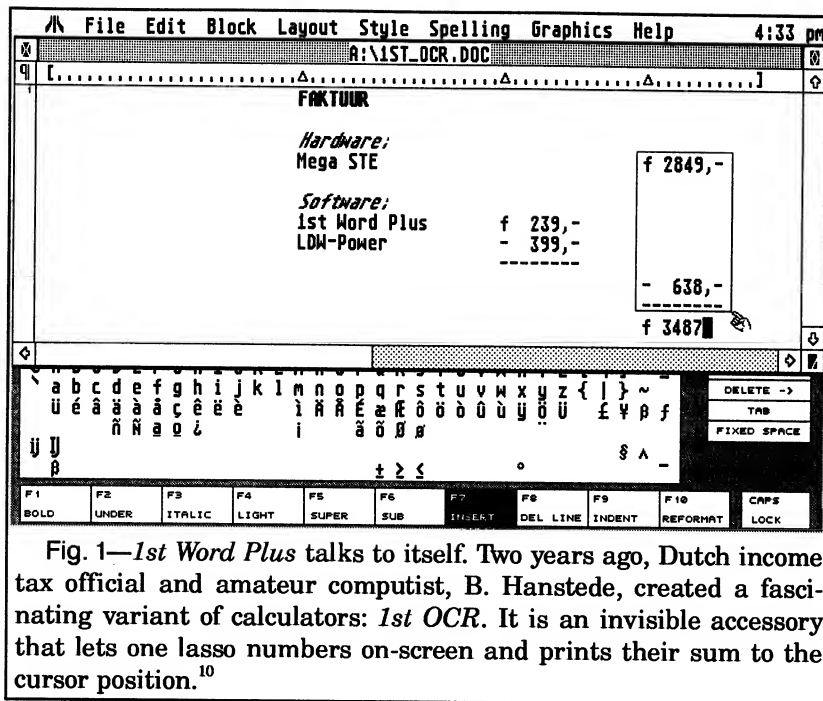


Fig. 1—*1st Word Plus* talks to itself. Two years ago, Dutch income tax official and amateur computist, B. Hanstede, created a fascinating variant of calculators: *1st OCR*. It is an invisible accessory that lets one lasso numbers on-screen and prints their sum to the cursor position.¹⁰

When I called Borland to ask about this, their attitude was mostly a big shrug. "We don't support Side-Kick version 1 anymore. Get Side-Kick version 2."⁸

So there! We'd be much wiser to stay out of the path of our modern-day Juggernaut⁹ and embrace liberty in the pursuit of making our own assemblies by selecting from a plethora of programs and accessories made by independents, be they professionals or amateurs or us. Items should be designed for the free and easy interchange of packets of data and/or services. To this end we may all be better off if Atari (and Mac!) computers survive rough times in the market place to keep open alternate routes.

For our STs, interchange of data might require more extensive use of existing programming protocols or the creation of more suitable ones. Perhaps a small, subcutaneous intervention in TOS would be in order—I don't know enough about these things to write with authority. The Fleabyte calculators utilize TOS's

⁸ Cairn MacGregor, "I wrote this column with the help of my buddy, SideKick." *The Gazette* (a Montreal newspaper), Oct. 2, 1993, p. J6.

⁹ From *BuEllfinch's Mythology*, 1978 Edition (Crown Publishers), p.322: "While [the Juggernaut] moves along, numbers of the devout worshippers throw themselves on the ground, in order to be crushed by the wheels, and the multitudes shout in approbation of the act, as a pleasing sacrifice to the idol."

¹⁰ B. Hanstede, "1st OCR." (Dutch) *STart*, May/June 1991, pp.22-24. Article includes program listings.

general input/output buffer record (*iorec*) rather effectively to make direct deposits of data in another window. It doesn't require a programmed designation of the target; any program or accessory is welcome to share Fleabyte's findings without having to resort to a clipboard.¹¹ I call this pipe a *wormhole* and that accessory totally dependent on it *The Wormhole*. See Figs 1 and 2.

Mystery of a Wayward Worm

"I've tried *Wormhole* and I like it, but a program such as this is useless if it tells me that $10/5 = 1.777777777$ and $5/2 = 2.16...$," came a message on GENie.

It hurt. It hurt because I must bear the blame for this errant behavior even though as an amateur programmer I lack easily accessible, complete information, which is one major flaw in the Atari support system (but, I am told, not in IBM's). An accessory from the Fleabyte mold, the *Wormhole* lassoes text on-screen and then utilizes it. In the reported instance, the user drew a box around $10/5 =$ and *The Wormhole* printed to the screen 1.7777777 —a darn ornery thing to do.

My surprise was not total, because I had already found that a program, or a combination of programs running in the background, can interfere with *The Wormhole's* task. Recently, I had run into a pesky problem when I tried to demonstrate *The Wormhole* accessory to a fellow Atarist, Leo Scalia, on his Mega. Every mathematical expression I typed got "0" as response.

At the time, I rationalized the problem away as a mismatch between screen fonts as envisioned by the Mega's operating system and those in a library embedded in *The Wormhole*. I suspected that the folks at Atari had fiddled with the 16x8 matrices which, I gather, direct alphanumerics to the screen. And I knew from experience that such a mismatch begets nulls on one's requests.

The errors reported by that piece of electronic mail showed an order of sorts. *The Wormhole* answered as if it had worked out $16/9$ instead of $10/5$, and $13/6$ instead of $5/2$. This was not quite like what had occurred at Leo's. Were characters switched or overridden? What would do this and why? And what would be my chances of finding the cause with my meager knowledge of computers?

¹¹ For the direct transfer of information from a Fleabyte accessory, see: vE, "That's Write 2 in Concert," CN, June 1993, p. 19, Fig. 1.

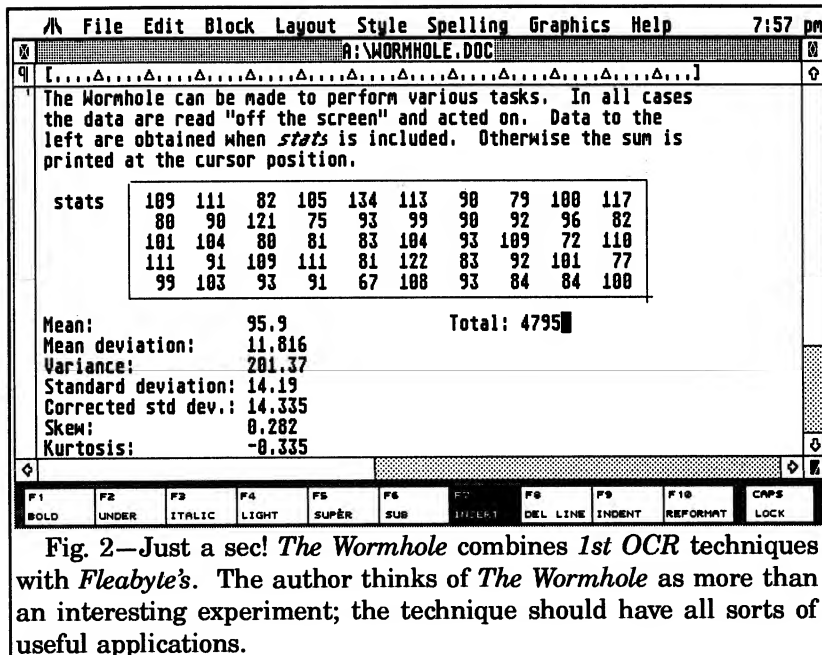


Fig. 2—Just a sec! *The Wormhole* combines 1st OCR techniques with *Fleabyte's*. The author thinks of *The Wormhole* as more than an interesting experiment; the technique should have all sorts of useful applications.

Ghostwriters on the Sly

In the excitement, I forgot why I carried *Quick ST* in my auto folder; I don't think I really need a screen accelerator, unless there is a long graphics routine to go through. Using LHARC for some archiving, I typed the command line:

a a:\fbsx.12 b:\fbsx.12*.*

And it happened as I typed! Right there, on the monitor! With my own eyes I saw the ghostwriting as you find it reproduced in Fig. 3. Yet, when I dared press the RETURN key, archiving proceeded as if nothing untoward had happened. The archiving instruction had been there alright, but not for human beings to fathom! It was as if the screen's face was read like *The Wormhole* reads it. "By its matrices ye shall know them!" must be Sacred Writ . . . For a worm.

Voices from the Crypt

Edgar Allan Poe and Sherlock Holmes used to share magnanimously from their wealth of experience in matters sleuthful and cryptic. We are still indebted to Poe's character, Legrand, in "The Gold Bug," for demonstrating how he deciphered

53†††305††6*†4826†4†.†4†††806*†48†8†6
0†85†1††††8†83†88†5*††46††88*96*†?
8†*†††485††5*††2*††††4956*2†5*†4†8†8*†
4069285††6†8†4†††1††9†48081†8†8†1†48†
85†4†485†528806*81††9†48††88†4††?34†4
8†4††161††188††?†

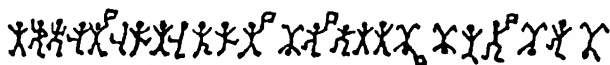
In the present case—indeed in all cases of secret writing—the first question regards the 'language' of the cipher; for the principles of solution, so far, especially as the more simple ciphers are concerned, depend upon, and are varied by, the genius of the particular idiom.

Legrand then went on, rather less helpfully

In general there is no alternative but experiment (directed by probabilities) of every tongue known to him who attempts the solution, until the true one be attained.¹²

That'll do. We ought to have profited sufficiently from Legrand's mode of thought to confidently advance with our own exploration. (Though I wish Poe were still around to write our software manuals; we would surely profit from his expository skills!)

But then again, to be armed better still I also called on Mr. Sherlock Holmes, that other authority on secret code. After being confronted with the enigma of "The Dancing Men":



he openly confided,

I am fairly familiar with all forms of secret writings, and I am myself the author of a trifling monograph on the subject, in which I analyse one hundred and sixty separate ciphers, but I confess that this is entirely new to me. The object of those who invented the system has apparently been to conceal that these characters convey a message, and to give the idea that they are the mere random sketches of children.

Having once recognized, however, that the symbols stood for letters, and having applied the rules which guide us in all forms of secret writings, the solution was easy enough.

Out of 15 symbols in the first message four were the same, so it was reasonable to set [these] down as E. It is true that in some cases the figure was bearing a flag, and in some cases not, but it was probable from the way in which the flags were distributed that they were used to break the sentence up in words.

Speaking roughly, T, A, O, I, N, S, H, R, D and L are the numerical order in which letters occur; but T, A, O and I are very nearly abreast of each other, and it would be an endless task to try each combination until a meaning was arrived at. I, therefore, waited for fresh material¹³

¹² Edgar Allan Poe, *Tales of Mystery and Imagination*. Pan Books Ltd, pp.114-115.

¹³ Sir Arthur Conan Doyle, *The Return of Sherlock Holmes*. John Murray and Jonathan Cape, 1974, p.80ff.

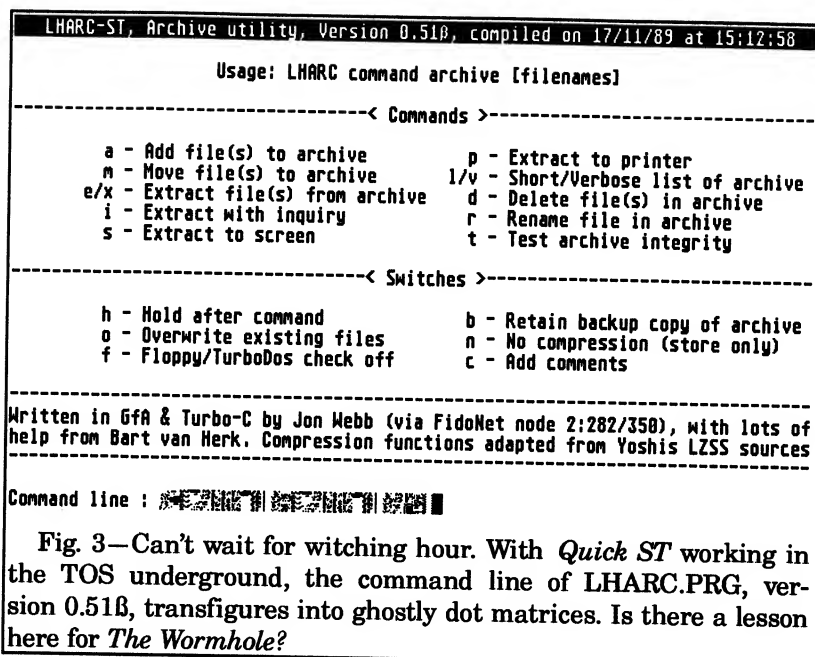


Fig. 3—Can't wait for witching hour. With *Quick ST* working in the TOS underground, the command line of LHARC.PRg, version 0.51B, transfigures into ghostly dot matrices. Is there a lesson here for *The Wormhole*?

How wise a conclusion! How well I'd do to walk in Mr. Holmes' footsteps! Thus, I set out to provide myself with fresh material and to consider the effect of breaks as well. Running an LHARC, along with that one time *must have* of every Atarist, *Quick ST*, in the auto folder, I typed:

abcdefghijklmnopqrstuvwxyz

which returned:



Then, continuing:

ABCDEFGHIJKLMNOPQRSTUVWXYZ

whence:



With SNAP_IT.PRg in my auto folder, I began a more thorough investigation. I made screen dumps, one after the other, and transported them to DEGAS. Hours were spent enlarging and comparing. Though most of the ghostly characters were in one-to-one correspondence with common alphanumerics, this was hardly the rule.

At last, I realized that computer code does more than depict characters and, therefore, I tested a format more in keeping with a program designed for archiving:

a:abcdefghijklmnopqrstuvwxyz

This paid some dividends:



but also engendered additional conundrums. Those, however, I shall leave to the reader as an entertaining exercise for the long evenings of winter.

Occam's Razor

However much engrossing such an investigation, the main questions won't go away. Just what caused *The Wormhole's* erratic behavior and what can be done about it?

Was the cause *Quick ST*? I phoned Leo. "Remember when I tried to demonstrate *The Wormhole* on your Mega?" "In September?" Leo remembered. "Do you use a screen accelerator?" Of course, he does. I knew that from Leo's demonstration of work with *DE-GAS* at our Montreal Atari ST club's November meeting. He owns *Warp-9*. "Did you have that in your machine last September?" Sure, he had. I sent off a message to the fellow who preferred his *Wormhole* accurate. "What is in your auto folder?" I asked. He obliged instantly via the genius of GENie:

CODEKEYS.PRG	DCSHOPIC.PRG	DCSHOTXT.PRG
DCSHOWER.PRG	FPPRNT.PRG	G+PLUS.PRG
NEOLOAD.PRG	POOLFX92.PRG	SDUMP.PRG
SILKMOUS.PRG	TOS14FX2.PRG	UIS_III.PRG
WARP9_ST.PRG	XBOOT.PRG	

"Aha! *Warp-9* it is!" I almost reveled, reinforced by knowing that *Warp-9* is offspring of *Quick ST*. Let me immediately assure one and all that it transpired I was wrong. *Warp-9*, by itself, is not as mischievous as all that. However, I haven't tried further to detect the exact combination of programs responsible for the problem; there are just too many other things in need of attention.

But we are still left with that other burning question: what can we do about the problem? The Fleabyte project has taken up much time. Will part of this be wasted—damaged by other software? Or is my own accessory at fault? At any rate, experience shows there is much merit in using Occam's razor which, in the crude vernacular of modern times, cuts straight to the heart of many, too complex things:



Thus reminded, then, from my Atari in the STicks, I wish you in words plain:

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Small's Second Law

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In order to show you *why* there is a Small's Second Law, I'm going to have to bore you for a moment with my background and history with computers. Small's Second Law comes **directly** from observation and experience with computers. I'll try to keep it short; then we'll get into the Law.

Time Spent with Machines

I've been dealing with computers since, let's see, 8th grade, 1972. That makes it 21 years since I first encountered a Teletype(tm) with paper-tape punch and reader being "mass storage." I'm 35 now, so that makes 14 years spent without computers, 21 years spent with them—40% of my life without computers, 60% with computers.

Since college, since 1980, I've been dealing "professionally" with computers, earning a living (sometimes "eking out" would be more accurate).

During all those 21 years, I was writing programs, forcing the machine to often do things it was not designed to do, or bypassing restrictions which I didn't want to be restricted by. All of this has required me to write a lot of computer programs, generally in BASIC and assembly languages, but a mix of other languages have shown up, APL, C, Fortran (still good for number crunching a Cray), Pascal (NOT!), and whatever else I needed to know, generally about the hardware I was programming.

A Lot of Data

All of this amounts to a **very large** amount of raw data. Many programs I've written have been **very long**. Spectre GCR has something like 25,000 lines of code in it, but that's not really how much has been *written*; I've ripped out *at least* 10,000 lines that went obsolete (for instance) when the 64K ROM support was torn out. So 35,000 is a more correct figure for what I actually wrote; with the other programs, it probably totals to 50,000 lines, and that was just *one* product I've done over the years. (Spectre 128, which contains the essential core of Spectre GCR (GCR adds Mac disk access with a lot of software), was written in about three months.)

I'd like to point out for clarification that what I wrote was **human-readable** source code, 50,000 lines, just like you sitting down at a type writer and writing lines in a letter. (At 55 lines per page (average), that's, errr, 909 pages. Gee, that doesn't seem too much, except when I print it.) The computer then has a program called an "Assembler," which takes that human-readable stuff, reads **only** the computer-relevant stuff (it skips the comments and such), and the Assembler writes a machine-language program, in 1's and 0's, that the 68000 or

68030 (TT/Falcon) will follow. I wanted to make this clear; I'm not speaking of final machine language program length (the stuff you buy at a store is machine language code, made one way or another; *it has to be* to run on the ST), but rather line after line of human-readable text.

Again, we're talking about a whole *bunch* of data here, over the years. I mean, program source codes (and the program itself) are just *data*, like any other computer data. I want to get across to you that there is **no** fundamental difference between the way the computer stores the human-readable program in a file, the translation of that into computer-ready "machine language" program in another file, **versus** "data files," such as word processor documents, spreadsheet data, or a filled database. **Everything is just a file** ...and it goes even deeper than that (I'll explain in a bit). It's **all** computer data, programs or "data files." It's the stuff that "expands to fill up whatever storage device you have." *grin* — that law of computers has already been stated by someone else! But computer data is just 1's and 0's, only 2 possible states. (Someday more work will be done on computers that use more than 2 states to express everything).

It's easy for me to say that over the years, I've written at least 50 megabytes worth of computer **source** code, probably far more than that if I sat down and analyzed it more carefully. Spectre GCR *alone* is 4 megabytes long in source code, and I've done many projects that were of that order—the L.E. system disk drive ROM in Z-80, the UDC Z-80 code (8 paralleled Z-80's keeping in sync, very difficult to keep them that way!), and just plain gallons of Cyber code to, err, access things I needed to access. (I don't know what the statute of limitations is.)

Large Amounts of Organized Data

What I'm trying to get across to you is that if you use a database, oh, like Dave Troy with his *DBman* programming series, or a word processor, or a spreadsheet, or a desktop publishing program, you, too, are using (in the program's machine language instructions to the computer) and generating a **large** amount of data, just like I do. And it's **all** just bytes to the computer (1 byte = 1 character), whether it's a carefully done advertisement by *Quark XPress*, a memo in *Word Perfect*, a projection via *Microsoft Excel* spreadsheet, or a big database with 50,000 names. We're all dealing with a **lot** of data. Computers are able to handle more and more data all the time; the "average" hard disk now put into cheap PC's is now transitioning from 170 mb to 330 mb. (One could hope Atari reads this in regards to Falcon.)

[“War Story”] (*grin*): Me, I added a second 170 meg Conner IDE drive to my 486-PC when my son Eric saved too many “gun camera” pictures from the PC game *X-Wing*, and filled up the hard disk. *X-Wing* is worth a long trip to go see; it’s among *the finest games ever done*. It’s from George Lucas’ (Star Wars) computer game division.

In short, we’re all pretty much alike in that we’re all dealing with lots of data: that’s what computers do! They just shuffle numbers. It’s **people** who have given those numbers significance; for instance, we agreed on ASCII, the American Standard Code for Information Interchange, which says that an “A” is number 41, so if a computer “prints” a number 41, you see an “A” printed. Other numbers are used for graphics, sound, mouse control, keyboard input, and so forth. See my *Current Notes* column “Numbers” (February, 1989) for many wild uses numbers are put to—like your telephone conversation being sent as numbers.

And this is where Small’s Second Law comes into effect. If you’ve dealt with a lot of data, as I have and many of you have, you probably know this intuitively by now, just from experience; if you haven’t dealt with a lot of data, you won’t yet have seen many occurrences of this.

Small’s Second Law

“Computer data’s disorder **always** increases towards complete data loss. Trying to repair the data *usually* adds to the data loss.”

What I’m saying is that, **in some way**, computer data **always** tends to decay and get corrupted, until you are left with total randomness: e.g., your data is lost. I have seen this so many times in my 21 years with computers that I no longer believe it to be “coincidence.” (As the old saying goes, “The first time, it’s coincidence; the second time, it might be; the third time, it’s definitely enemy action.”)

This makes perfect sense for truly massive amounts of data. There are just plain defects in 99% perfect disk/tape media, and a bit can “fall through” and get lost. Software doesn’t always detect that. When you reach trillions of bits of data, which is real fast, you’re really walking on thin ice.

A perfect example is the work I did on Spectre 3.1 last night. I looked at the “main” file (which used to contain all of Spectre, until it got just *waaaay* too big, and was split into about 20 subfiles plus the main file). Anyway, the main file was 80K long. I thought, that’s impossible—it should be 400K long. I pulled the file into the text editor, and sure enough, the file stops in mid-sentence; most of the main file was gone, I know not how or when. I have to dig into backups now and try to find a valid one. It is an awesome problem: *How do you know that your disks/files haven’t gone bad?* When you have 10 hard disks across many machines, plus many Syquest 44 meg cartridges, this is **not** a trivial problem. I literally no longer know even **half** of what I have Somewhere on disk.

But saying it is not accidental. By creating a computer data structure, you are going against the grain of the universe

(which is to run down). You’ve created a non-random, non-chaotic structure. That’s throwing down the gauntlet at the universe.

Small’s Second Law is extremely similar to the Second Law of Thermodynamics, which says that “the entropy of the universe is always increasing to a maximum.” Thermodynamics is more-or-less about heat, and heat transfer. Entropy is more-or-less “chaos” or randomness; this law is saying that *useful* energy in the universe is always dropping, as the universe moves towards being all at one constant temperature (probably just a bit above absolute zero, something like -421 degrees F).

Let’s talk about this. First I’ll translate it into English, then give you **why** I feel this is so.

In terms of thermodynamics, it’s pretty straightforward. Think of a candle or a wood log as potential heat and light. When you light them, they give off heat and light, until they are just ashes or smoke, and they end up the same temperature as the room around them (and they are not giving off any more light.)

The *reason* you light them is to give off heat and light. The *reason* they *work*, and are *useful*, is that the area around them is darker, or is colder. In other words, there is a *difference* in heat temperature and lightness *between* them; it’s the *difference* that counts. Whenever there are two regions that have a *difference* in heat, you can do *useful work* with them, by transferring hot to cold (basically) and warming up the cold until the two areas are even. If the two regions don’t have a *difference*, **you can’t do useful work**, for there is no energy to transfer from the “hot” area to the “cold” area. Congratulations; I just saved you a college Physics course.

Anyway, there is an ultimate end, when there are no more sources of heat, and everything is at the same temperature. The “heat death” of the universe, when it all ends, 15+ billion years from now, is simply when everything has the same heat. There can be no useful work done because everything is balanced, and it takes an imbalance to get work out of the universe. This is the point where “entropy is maximum” (which defines “entropy” for you, doesn’t it?). Fortunately, we have people like Steve Hawking who predict that the Universe is on a circular path that will eventually lead to another Big Bang, so we all get another turn at things. (This depends on your religion, really.)

Hydro-Electric Dam

Some people have a rough time understanding entropy and heat imbalance, so let me use another example to make it very clear, because understanding the Second Law (either) depends on this. Think of a hydro-electric dam. All this consists of is a dam, with water backed up behind it into a lake, just like Hoover Dam or Grand Coulee Dam.

The water is often *hundreds* of feet deep in the lake. Beyond the dam is the original river bed. Engineers run a (big) pipe from the lake’s top to a “turbine,” which is just a water-wheel that is spun by water rushing by, and have the water exit out the normal river bed downstream at impressive pressure. (Modern turbines actually don’t resemble a waterwheel,

but it helps get the idea across). Since this turbine is being spun by *immense* force, it can be connected to an electric generator and spin it (generators need a great force to spin; they *fight* being spun because when you spin a generator, you get electricity coming out of it, and since you can't "create" energy (First Law of Thermodynamics), the electrical energy going out has to come from the water rushing by the turbine, turning it.

Now imagine the difference if the lake is drawn down so far, let's say by drought, that there's just **no** more water; the lake is bone-dry and the river dried up; the "upstream" side of the dam is "at the height" of just the river bed, same as the "downstream" side. Now, you can't spin a turbine with water flowing from a "high energy" (literally, high in feet) region to a "low energy" (literally, 0 feet relative to the dam.) No turbine spinning, no generator spinning, no water coming out of the dam. No electricity. All because there is no **difference** in the water heights.

[War Story:] If you go to Comdex in Las Vegas, or are ever in that region, please, please go for the tour of Hoover Dam. It's a 20 minute drive from Las Vegas towards Arizona (in fact, the dam spans the border). One high point of the tour is to stand on top of the **huge** pipe that the water from the top of the lake is rushing through, on its way to the turbine it's going to spin. It's the first time I have ever felt what it must be like to be on a space ship taking off; there is a **completely awesome** rumble that gets even into your bones. It's the effect that sound special-effects people try for when the Enterprise is hitting Warp 9.5 ... but they don't match Hoover Dam. I have never felt anything like that. The tours are run regularly and often, and are marvelous fun. Extremely recommended if you want to see what mere people Can Do if they want to, and have the courage to do, and a distinct lack of needing to file an EPA Environmental Impact Statement; that dam was built in the 1930's, during the Great Depression ... and is a Wonder of the World, in my opinion.

Power Reserve

Here in Colorado, we use water as a massive energy storage battery! During the night, when people aren't using much electricity in general, our power company pumps water from a very Low Lake something like 2,500 feet higher, to the "High Lake." A lot of water gets pumped, using electricity, *STORING DIFFERENCE*, see? Then in the daytime, as the air conditioners or heaters (depending on the season) go on, and the power company needs more power, they let the water run down from the High Lake to the Low Lake, spinning a turbine/generator on the way, and send the power to Denver and the Front Range in general. The High Lake gradually drains, and runs out just about at the end of the day--and is pumped up again at night.

People on the West Coast ought to be Real Familiar with this situation, what with the droughts they have had over the past years.

I have to get across to you that only a **difference** in energy matters, and can do useful work, before I can explain what it has to do with a computer. Let's continue.

Now an unburned candle represents *potential* energy, just as does a lake hundreds of feet high, *only* because it has more energy than the surroundings (downstream, hundreds of feet down). In the dam's case, gravity supplies the difference's energy; scientists tend to call this difference "delta," using a triangle as the symbol. (Thus, the height of the water in the lake would be Delta Water).

Or with heat, you light the candle, it gives out (radiates) heat **only** because the region around it is colder. (delta Heat) The candle's energy (or the log's) ultimately goes into heating the immediate environment, and when they've burned out, there is no more light, and the candle/log's remains are at the same temperature ("heat death") in the room (the immediate environment). Sure, the fire heated the room up, but now everything is at the same (higher) temperature. Entropy is at a maximum; no heat deltas around; no useful work can be done in terms of heat. (This is when you "throw another log on the fire," as the song says; when there are no more logs, you get a preview of the universe in 15+ billion years.)

Negative Delta

To prove this, throw the candle into a high-temperature furnace. Negative Delta! Now it is the *candle's turn* to *absorb* heat and to melt down and generally die; it's *possible*, but not definite, that the candle will contribute heat to the furnace.

(No? For instance, a thermite reaction is at around 4000 degrees F, and would just consider the candle an irritating interruption "in the way" of iron oxide (rust) and aluminum powders furiously and vigorously burning together, creating Al_2O_3 plus two free iron atoms plus 203,000 calories of heat.* (1 calorie heats 1 cc of water 1 degree C, so call it boiling (0 to 100 degrees C is the same as 32 degrees F to 212 degrees F, water from just above freezing to boiling, for 2030 cc of water). That is a *significant* amount of energy, and it is a spectacular demonstration.

Now let me scare you and quit talking Thermodynamics ... as long as you understand that there is a long-proven Second Law of Thermodynamics that just **might** apply to computers, too.

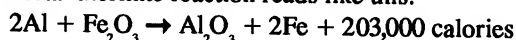
As you'll recall, Small's Second Law states: "Computer data's disorder **always** increases towards complete data loss. Trying to repair the data *usually* adds to the data loss."

I'd like you to think of a **perfect** ST hard disk. The partition map and twin FAT tables are in perfect order; the files on the disk are all on consecutive sectors (e.g., the disk has been "packed" by a disk repair program), each sector has no data errors; everything is readable, and each file contains exactly the data it should have.

(I'm not sure I have ever seen one of these. It didn't hit me until I had seen this so many times that it might be *The Way Things Are Supposed To Be*.)

Think of your data on that hard disk. It is very much, by analogy, like Hoover Dam filled to the very top. In Hoover Dam's terms, the water potential (delta) is maximum and

* The total thermite reaction reads like this:



VERY powerful; if any more water comes in, it will go into the spillovers.

IF the Second law of Thermodynamics applies to this Perfect Hard Disk, what you have is a very *unstable* situation. You have a "high energy," (organized) disk drive in a "low energy" (disorganized) environment. Just as the Hoover Dam engineers know that at maximum height, the dam is under maximum stress—that water is trying very hard to equalize the difference, by breaking the dam if necessary, as it has done many dams—your hard disk is *organized data*, and under stress of breaking.

No?

The natural state of the universe, and data, is disorganized, maximum entropy. Sort of like an unformatted disk with random data. (I mean, it's only the natural state of the universe). And that Perfect hard disk is at Zero Entropy, which the Second Law of Thermodynamics says the universe Just Hates. It wants that data disorganized and random ... instead of "heat death," "data death."

And as you begin to access the Perfect Hard Disk, it's going to do its *damndest* to "seek the lowest level" and equalize the difference; e.g., crash.

Empirically, from observation, I have seen this many, many times, so I'm going to lay it down as a law.

The analogy is comparing perfection in data organization to a high energy point. This is not without precedent (and a good one). The *Third* Law of Thermodynamics does this. It special-cases crystalline structures (e.g., organized molecules, such as diamonds or other carbon matrix structures) for the Second Law; the universe doesn't like perfect crystalline structures; it would prefer them to be disordered, not interlinked in a complex, perfect matrix. For example, if you take a crystalline form and heat it to melting into a puddle, you've increased that substance's entropy. The universe is all *for* increasing entropy (which is a scientific way of saying, "Life's a bitch, then you die, and Mother Nature Approves.") So I see no reason, particularly with the wild but true things happening in Quantum Physics, to avoid telling you that the universe *hates organized data*. The bigger the data, and the more organized, the better. What's the difference between organized data and a structured, latticed crystal?

Begin thinking of that Perfect Hard Disk as a high energy source surrounded by low energy levels, trying to drag it down ... and you have disk crashes, both software and hardware.

To illustrate, let me tell you a war story. I violated the Second Law, and paid dearly for it.

War Story

Awhile ago, I decided that all the versions of my main program and its subroutines (in their separate files) were just getting out of hand. The clock feature of the ST wasn't working that well for me (it took awhile to find out why), and I often could not tell without looking *into* the file which of a given set of files for one subroutine was the *right* one, the latest one! So I decided to set up the Perfect Version Hard Disk, wherein I would put every file where it belonged, with com-

ments. So I got a new, but broken-in, hard disk, well past the "infant mortality" stage, and created areas on it. On went folders "1.51," "1.75," "1.9F," "2.3K," "2.65," "2.65C," "3.0," "3.1Dev," those being every known version of Spectre. (I also created others that only Beta Testers saw; where do you think those revision numbers came from? Lots of testing and bug fixing.)

And for days on end I looked through floppies and Syquests and grabbed files, checked them, and put them in their place. It really was a bitch of a job; I expended a lot of energy and a lot of Diet Pepsi.

[Think about this. This is *just* like the power company pumping water up the hill at night, creating an energy difference. I had created an anti-entropy, thus anti-universe, condition by organizing so much data].

Within each folder, I cross-checked by actually creating Spectre with what was in the Folder, and then comparing it with the real, live, production Master Disks, which Sandy has been smart enough to keep for every version of Spectre. (She is quite testy about me not returning them "promptly," after I copy them, too! Oh, well ... if she wasn't, she wouldn't have a collection, and neither would I.)

Each folder, in turn, got a documentation file, named ZZDAVE or READ.ME or something else wildly creative, which talked about what I knew of that folder.

Naturally, I ended up with a number of files that were in-between versions. For example, Spectre 3.0 had 19 Beta releases (the last one a real hair-raising one; *Pagemaker* suddenly broke and we had to fix it with just hours of time in one day.) There were 19 versions of Spectre 3.0 on various hard disks, floppy backups, and whatnot. What to do? I decided that since this was the Definitive History Of Spectre, I would include them, against the possibility that some program would run with one version, but not with another Beta version. (This happened a lot and we generally fixed things, but sometimes we broke them, like *Pagemaker* in Beta-18). It took a lot of space, but I did it.

I also ended up with a number of "miscellaneous files," like the keyboard layout of a Mac Plus and what keycodes it returned. Those went into carefully descriptive folders.

Then, I put on a fail-safe checker for each file. I ARC'd them up, and made a listing. ARC compresses the files, but more importantly, calculates their "CRC," or Cyclic Redundancy Check. This is a way of making a number that corresponds directly to the exact status of the data of the file (switching two characters really changes the number in a big way!). The idea is, if the CRC stays the same, the file stays the same. CRC's are not perfect, but they rate in the 98% class of perfect. Twin CRC's, using different methods, raise that higher. This was my "future check"—I could always come back and verify that every file in every folder was still good.

[Okay, I have now "filled the dam to the top." Everything is shaky now as far as Small's Law. I have maximum data organization. I have defied chaos (which is essentially a part of entropy; chaotic movement at the atomic level results in no movement at our level) by bringing everything into perfect organization, then running a huge batch file which

re-checked the CRC of every one of some 1,500 files on disk. (NOTE: 1,500 files on disk is no big deal anymore. I have that many on this "obsolete" laptop I write on! ... plus two books in-progress ...]

Then I printed out the comments from each folder, and congratulated myself. I now knew where **everything** was, precisely, at that second.

I violated the Second (and Third, special case) Thermodynamics laws as I've applied them to computers, which say the natural way of the universe is to run down. I had expended energy and made an organizational high energy point. As with crystalline structures, the universe does not like order.

I had made a serious mistake. Think of a sand castle 50 feet high. That's what I *made*. The quite natural forces against organized data, probably through quantum mechanics, then spun a space/time history for me that would bring things back into balance—scatter that sand castle onto the breach. (Good heavens ... If I had not observed the disaster, would it have happened? That's a haunting question.)

Well, I had two laws working against me. The universe tends towards chaos. *Bam*. And the universe really hates order, such as is found in crystalline structures; it prefers them to be melted down to disorder, or better, boiled to gas, maximum disorder. Double *Bam*.

I powered down the system to add a tape drive to back the whole thing up, about a month of work. I powered up. The drive did not respond to powerup.

I broke out in a cold sweat.

Over the next week, I tried *everything* to bring back that drive. I replaced its circuit board, power supply, spun it by hand, whacked it for stiction, everything. It was DEAD. I had no backups.

Sure, you think, I static zapped it, or the SCSI cable broke, or the power supply picked that moment to zap the drive. Yeah, right. I no longer can bring myself to believe it. *I have seen too much*.

The universe had struck: suddenly, this high point of organization had been brought down. Probably somewhere atom fans were doing "The Quantum Wave," and cheering.

Since this incident, I have made it policy to **never** make a substantial effort to really bring **organization** to my hard disk. Oh, I sorta keep track of things—but I do not want to raise my organizational level too high, to where Something Out There will want to reduce it to total randomness (like a zapped hard disk).

What I do is keep **at least** one partition of total disorganization on the hard disk. I know, I know. It sounds kooky. It works, too.

My drive failure rate is at an all-time low. One drive even **recovered** (a Syquest with a spindle problem), helping me get hours and hours worth of downloaded data off it, before it finally died, not five minutes after the final offload. Spooky.

The implications of all this rather frighten me. I've seen it all the time. Simply, concentrations of data suffer failures! Part of it is that we are simply pushing technology too far; a 98% success rate means someone gets the shaft. Atari is not known for 100% tested and good machines; that's reflected in

the affordable price. But, I have had files go bad for no reason on the 486 box I have, also, and the Macintosh ... sheeesh, we keep an Installer set by each one, because we are **always** reloading System and Finder.

Visible Storage

My only hope is the **worm** drive. And yet, sooner or later that drive, or the SCSI interface, or the AT&T, will fail; they are at the 10-year lifetime limit, where your printed circuit board starts cracking from too many heat-ups and cool-downs, which expand and contract the traces. I think if it became necessary, something irreplaceable would go down, cutting off my access to the **worm** drive.

It makes me actually consider **visible** media, like punch cards or literally paper tape. Stuff on disk is subject to quantum effects in the controlling board and on the disk. A hole in a paper tape is not. The high speed readers are attractively fast, and the equipment is ultra-surplus-cheap.

Another possibility is to not build such high, towering concentrations of data, which are just begging for a thunderbolt from the sky. Take the lower tech approach. Sure, use a hard disk, but use only limited organization, nothing like my fanatical approach. Keep a significant amount of your disk chaotic, all sorts of new downloads to check out, to deliberately forget about and lose, and you will decrease your organizational/energy potential. You won't become a crystalline entity the universe wants to melt down.

I'd like you also to consider that almost certainly, if you have 20 meg or higher, there is at least one file out there that is damaged. It doesn't matter why. Can you find it? That's what I thought.

(Least you think this is all stupid, let me point out that Mac ads for disk utilities report that about 50% of **all mac** shave directory damage. Macs do not use a simple directory; they use a B* tree, which can get trashed. If you get Spectre, get *Norton Utilities*, and do an Apple reformat of the Spectre partitions so Norton works. You'll need it.)

I came across the damage in my PC when, heaven help me, finding articles for French reprints (everything I write in *CN* is translated to French and reprinted. They told me about it, oh, a year after they started.) In the middle of one article I was reading, WHAMMO, there was machine language garbage from Something Else written on top. The original of the article was blotto. (I think the only place I could get a copy was from Joe Waters, our fearless Editor, or his More Fearless Editorette, Joyce.)

So there you have it. I believe that the Universe will follow its natural inclination to increase randomness, and to blur out high-energy or high-organizational points, and you can trigger it with a computer. (The business with Quantum Physics requiring observation is the key, I would bet.)

We're low on space this time, so we'll consider more laws another time.

And, yes, I'm perfectly serious about these laws. "Going with the flow" has been the only thing that allowed me to get stuff done!

— thanks, Dave Small

CN CARTRIDGE NO. 8

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March—December 1993

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 #789—Paula .MOD player
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 * Demo programs.

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STZIP

by G. Richard Yamagata

FOR ALL YOUR COMPRESSION NEEDS

[Since this review/tutorial was written, ST ZIP 2.3 has been released. It fixes some bugs found in V2.2. The screens are the same as those shown here and the compression efficiency is the same as that shown for V2.2. STZIP V2.3 is available on CN Library Disk No. 834. -JW]

The History of Compression

Compression of programs has long been popular in the world of computer telecommunications. Although modems have become faster, growing from the days of 300 characters per second (cpi) to 14,400 today, computer programs and files have become larger. Compression of the files to smaller packages, like 116K for the STZIP21.ZIP file that was 261K uncompressed, is needed to keep connect time short and, consequently, long distance phone charges down and fees for using premium services like Compuserve at a minimum.

In the stone age of ST computing, the first program and file format that was widely used was something called SQUEEZE.PRG. To uncompress a file, you used the aptly named UNSQUEEZE.PRG. This was extensively used by the early ST magazines to give their readers more programs than normally allowed on the early 320K, single-sided disks used in those by-gone days of the ST computing.

ARC.TPP replaced this system of programs. ARC not only compressed and uncompressed your files, it gave you a full complement of tools and commands which allowed you to compress a group of files together. Whole application packages with resource files, data files and accessory files could be compressed into a single file. An early example of this is

the SLM driver ARC file that contained all you needed to setup and configure your system to use the SLM 804 printer. This contained the program that went into the AUTO folder, accessory programs and some fonts.

ARC was replaced by LZH.TTP as the method of choice for file compression. LZH not only placed at your disposal a battery of tools for compressing files, it was more efficient in its compression. LZH is now being supplanted by STZIP.TTP for reasons that will become apparent as the features of STZIP are enumerated and explained.

Actually, STZIP is a misnomer. This ZIP program runs on any of the ST computers (TOS 1 to 1.6) and will uncompress the ZIP files, compressed with PKZIPv.2.04, present on any bulletin board service that supports IBM and PC clones. Since TOS 1.4 sup-

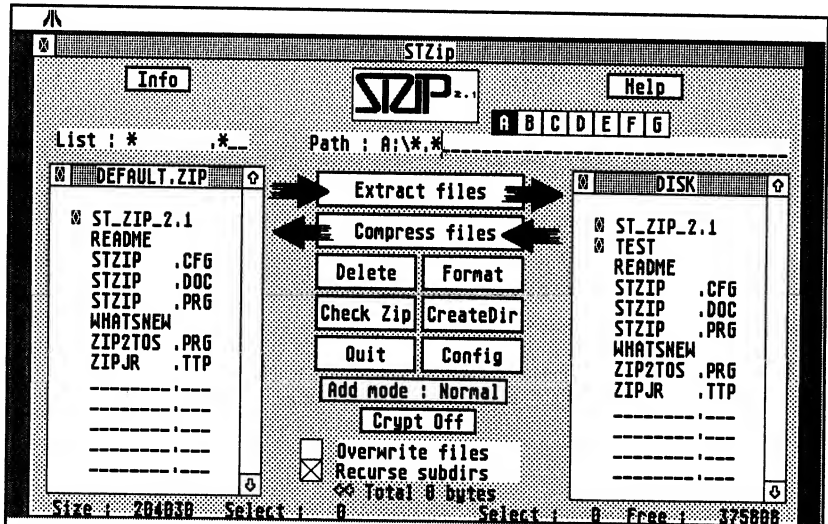


Figure 1. Shown is the Main Window Menu of STZIP. Except for the displayed version number, the window is the same for V2.1, V2.2, and V2.3. All selections are made by using the mouse. File names can be entered by hand.

Table 1. Shown are the sizes of files that have been compressed using ARC, LZH and ZIP. This comparison gives an idea of the efficiency of these compression programs for a picture file (PI3), a program file (PRG) and a text file (TXT). All values given are in bytes. The version number tested is indicated.

File Type	Uncompressed	ARCv5.01	LZHv6.02	ZIPv2.1	ZIPv2.2
DEGAS.PI3	32,066 bytes	7,314	4,964	4,904	4,904
PROGRM21.PRG	136,333 bytes	10,9991	66,162	64,009	63,910
TEXT21.TXT	32,032 bytes	11,152	9,789	9,613	9,578

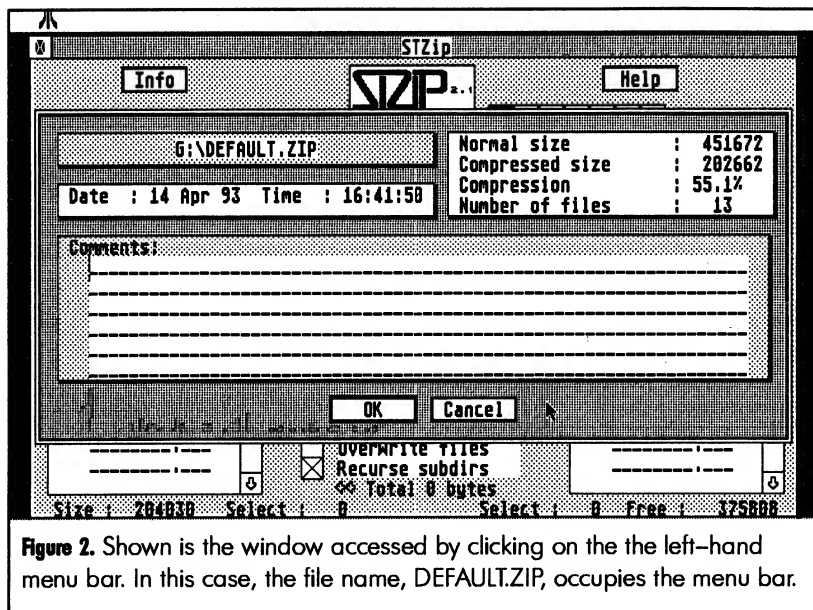


Figure 2. Shown is the window accessed by clicking on the the left-hand menu bar. In this case, the file name, DEFAULT.ZIP, occupies the menu bar.

ports the IBM 720K format, STZIP is the perfect compression program for you on your ST system if it has IBM emulation capabilities (i.e. Supercharger, PC Ditto, etc.).

STZIP will also uncompress files that have been processed by the Unix system's Info-ZIP programs. This gets a little muddy for neophyte users operating in either TOS or UNIX. STZIP commands and string functions are identical to those of PKZIP for MS-DOS systems. UNIX has its own way of doing things and may give some ST users a panic attack.

The Acid Test

Table 1 directly compares the compression efficiency of ARC, LZH and STZIP. ZIPv2.2, clearly has the best compression, making the smallest files. The LZH system and ZIPv2.1 are competitive with ZIPv2.2. If you are using a 14,400 baud modem, you will not notice the 0.09% more efficiency of v2.2 versus 2.1. If you are using a 1200 baud modem, this can mean minutes more time on-line for large files.

The areas where the LZH system lags far behind is in ease of use and cost. ZIP has an extremely user friendly GEM interface and can be operated entirely by using the mouse. The LZH system, supplied as LHARC602.TTP, uses a command line system, where you have to have the commands memorized or written out for reference for typing in the commands. The ARCSHELL program makes LZH and ARC more user friendly, but by the time you have sent in the shareware fees for LHARC and ARC-

SHELL, you have spent over \$30. STZIP is postcardware. All the author, Vincent Pomey asks, is that the users of STZIP send a nice postcard to his address in France.

Nuts and Bolts

Version 2.1 comes as a self-extracting ZIP file. After double clicking on STZIP_21.TOS, it uncompresses itself and you will soon have six files: README, STZIP.DOC, STZIP.PRG, STZIP.CFG, WHATSNEW and ZIP2TOS.PRG. Version 2.2 is supplied as a ZIP file that contains the same files named for 2.1, plus a file called ZIPJR.TTP. If you print out the docs, you have 15 pages of reading.

Using the STZIP program could not be easier. It is intuitive and the docs may

be superfluous for experienced users of ARCSHELL. Double click the program and it first asks you for the name of the ZIP file you wish to work upon. If you have an improved item selector, such as the one of TOS 1.4 or *Universal Item Selector*, you can select a pre-existing ZIP with a click of the mouse. If you are creating a ZIP file, you type in the file name, i.e. ABC.ZIP. If you are a TOS 1.2 or earlier user with more than one drive, you will have to type in the path file on the directory line. This is no different than for any other file selection.

Once the ZIP file has been designated, you enter into STZIP proper. The screen is shown in Figure 1. The ZIP file name that I chose is DEFAULT.ZIP and is shown at the top of the left-hand file selector menu. I have chosen drive A for the right-hand menu. STZIP

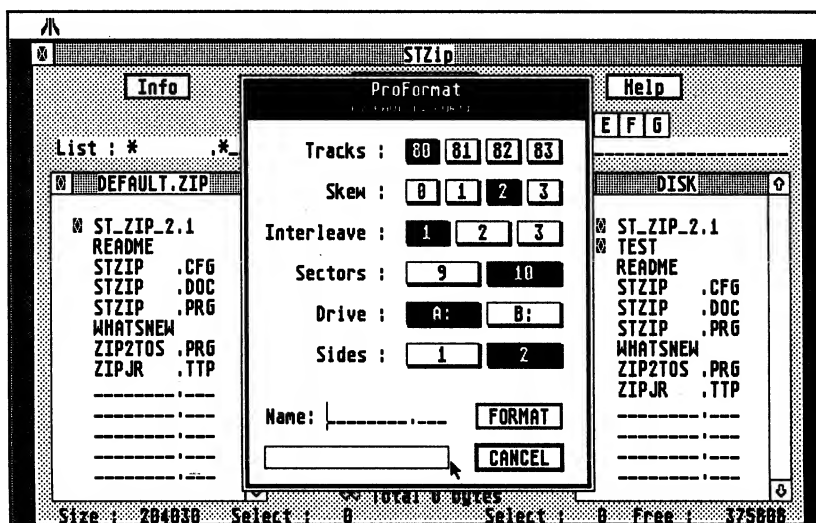


Figure 3. Shown is the Format option of STZIP, accessed by clicking the Format box.

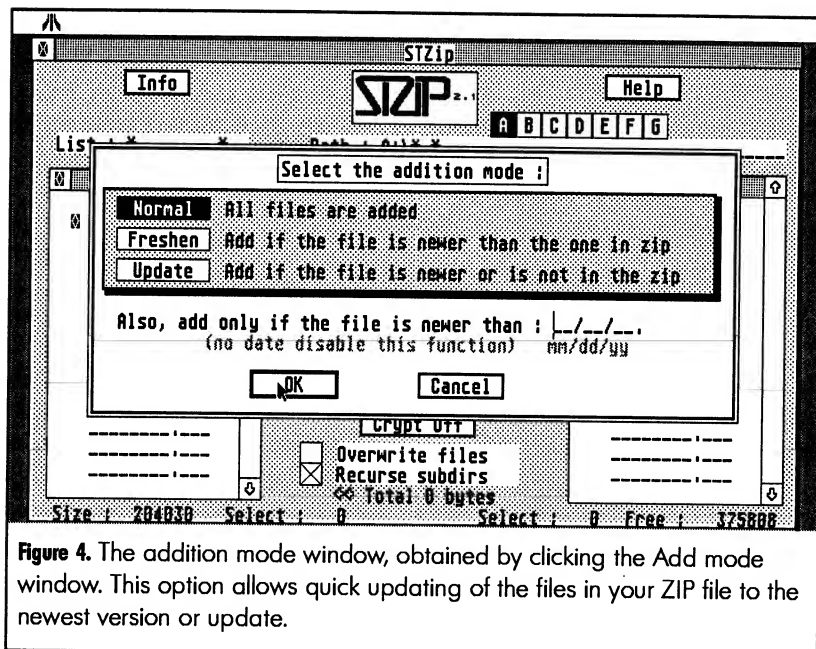


Figure 4. The addition mode window, obtained by clicking the Add mode window. This option allows quick updating of the files in your ZIP file to the newest version or update.

has an improved file selection interface. You can choose any drive or partition that is active in your system. Since I have a hard drive with partitions C-F, those are shown. Floppy users will be given only two choices, A and B.

To compress a file, just click on the files you want Zipped in the right-hand menu, highlighting them, and click on the Compress files box with the arrows showing file movement from right to left. You can cancel any operation at any time by hitting the [ESC] key. If you want to insert a comment that will flash on the screen whenever the ZIP file is uncompressed, just click on the menu bar containing the file name, which, in this case, is DEFAULT.ZIP. A window will open that will let you type in your comment. This feature will only function in version 2.1. This same option displays the status of the compression, in terms of the size of the compressed and uncompressed file or folder and the number of files present in the ZIP file for v2.1 and v2.2.

Extract is the intuitive reverse of Compress. You click on the files you want uncompressed in the left-hand menu, choose the file directory you want these to go to on the right and click the Extract files box with the arrows going left to right.

If you do not have an empty disk to place the uncompressed files on, you can click on the Format box and a nifty formatter comes up that is user configurable. You can make the disk access fast by skewing the format or you can format for high capacity with up to 83

tracks (if your drive is capable) and 10 sectors per track. You can experiment for the fastest and most efficient format settings for your floppy drives.

If you want the files to go to a particular folder, the CreateDir box allows you to create a folder. If you need to delete a folder or the ZIP is creating a conflicting folder name (you cannot have two folders with the exact same name), just use the Delete function to delete it. This can also be used to delete files.

What makes STZIP superior to LHARC is the ability to embed comments into the ZIP file and the ability to make the files not only self-extracting, but able to extract out to the folders that the person who compressed them wanted them to go to. No more having to read the docs to insure you have the proper files in the proper folders to get that un-

compiled STOS program to work. An example of this is that the DEFAULT.ZIP file has the folder ST_ZIP_2.1 compressed and will uncompress that folder with all six of the files of v1.2. If you wish to turn off this feature when extracting files, click and x-out the Recurse subdirs box at the bottom of the STZIP window. The extracted files will be written to the selected directory and no folders will be created.

The Check Zip option will go through the extraction algorithm and tell the user if the ZIP file will correctly uncompress to usable files. The Config option allows the user to select the criteria by which the files are ordered in the displays for the ZIP file and the drive or partition. You can select which of the four algorithms available you will use for compression. You

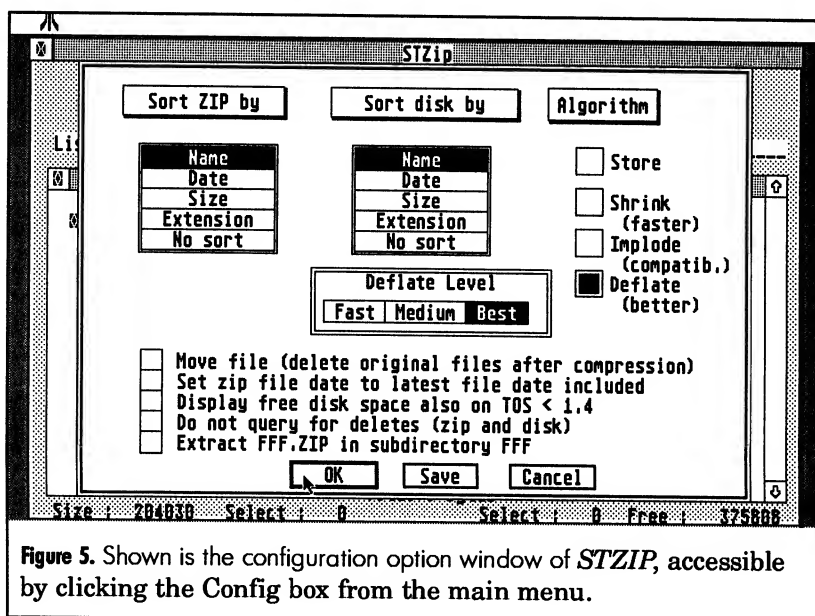


Figure 5. Shown is the configuration option window of STZIP, accessible by clicking the Config box from the main menu.

can set the program to delete all files as they are added to the ZIP file or to query for the deletes. Other options are listed, but have little utilitarian use.

The Add mode selection can switch STZIP from compressing to adding all files selected to the ZIP file or to "freshen" or "update" them. Freshen adds the file if it has a date newer than the one in the ZIP file. Update will add the file if the file is newer or is not in the ZIP file. The selection date criteria for these two actions is set by the user.

An interesting feature is the ability to encrypt a ZIP file. When the user compresses to a ZIP file, he can designate a password. If the password is not input into the STZIP program when the ZIP file is uncompressed, the extraction is aborted. This is an excellent method of ensuring the privacy of files when using public bulletin board services.

The most useful feature of the STZIP system for the PD uploader is the ability to create self-extracting files. The ZIP2TOS.PRG will ask for the user to select a ZIP file to make into a self-extracting TOS file. This means the end user does not have to have a copy of

STZIP to uncompress the files. You just copy the file to an empty disk or partition, double click on it and it extracts out to all the folders and files that were placed into the TOS file by ZIP2TOS.PRG.

Of the two, version v2.1 is my favorite, because of the functional comment option. V2.2 has fixes for bugs that are experienced by users of v2.1 in medium resolution. V2.2 also has a feature where you can select individual compressed files in the ZIP file for output to a printer. If you regularly use a monochrome monitor, you will be just as happy using v2.1 instead of v2.2.

All told, STZIP is superior to LHARC and ARC and I recommend using it for all your compression needs, especially if the person you are sending the file to has trouble working ARC.TPP, LHARC.TPP and/or Arcshell.

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ADVENTURES/SIMULATIONS

#153: Hack; Eamon Adventures: Eamon Beginner's Cave, The Devil's Tomb, Eamon Death Star, Holy Grail, First Eamon game, and V2.0 of the Eamon Main Hall
#360: Bermuda Race II; HeroI V1; Battle of Midway Simulation
#363: A Dudley Dilemma; Tark
#364: Love's Fiery Rapture; Susan, A Lustful Game; Des Ring Des Nibelungen; Pork (R)
#366: The Adventure Game Toolkit; Colossal Cave Adventure, Crusade, Elf's Adventure, A Fable, Ghost Town, Paranoia, Odieu's Quest, The Squynchia Adventure, An Underground Adventure.
#383: The American PaSTime Baseball Simulator V2.0D; Baseball
#387: Taipan II V1.1; Empire and Dungeon Master maps
#505: Kid Adventures: SDI; Mansion; Mountain
#507: The Text Adventure Development System; Ditch Day Drifter; Deep Space Drifter
#513: Disenchanted; El Bozo's City Out Of Bounds; Once a King; System 5
#761: Adventure Game Toolkit v1.3

KID GAMES (C)

#211: Tiffany's Barnyard; Deluxe Piano; Doodle; Kid Notes; Kid Sketch; Kid Music; Kid Piano; Kid Potato; Kid Mixup; ABC's
#431: Kidshapes; Kidshapes Plus; Kid Publish; Kidpublisher Prof*
#535: Kid Video (Add Up, Fonic, Geography V1, Me First V2, Me Second, Matcu)
#536: Burger; Circus; Robin; Rabbit; Santas Workshop; Color Quilt
#537: Makin' Aiken; Kidmixup Plus; Perfect Match; Letter Hunt; Enchanted Forest
#542: Rebus Writer; Wuzzlers; Kid Story
#547: Electronic Jigsaw Puzzle; The Wolf and the Seven Kids; Barnimals
#560: Wuzzlers II
#778: Forum V36A; Kid_GPI; Parlor V1.2; Yams
 * Game demo

NEW MONOCHROME GAMES

#848: Arka, a monochrome Arkanoid game; **Sound Search**, a musical concentration game; **#849: Break it!**, old Chinese board game; **GTHOR 2.0**, one of the world's best Othello programs; **Mathematics With Sasha**, a multi-plication learning program. **#850: The Ancient Art of ASCII**, a picture translated into text; **Coyote Dave's Poker**, grab a chair, choose a table in the saloon and sit yourself down for some five card draw poker; **Shift II**, puzzle game from Germany. **#862: Bounce**, sort of like bouncing ball space invaders; **ST Doodle 1.0b**, a nice monochrome paint program with an interactive user interface. Suitable for kids and adults. Over 40 drawing modes with several never before seen in a paint program. Shareware; **Search Me V2**, the ultimate word puzzle generator.

NEW COLOR GAMES

#851: Nostram, similar to the Bitmap Brothers game GODS; **Smash**, a nicely done Tennis game with a top-down view; **UK Match**, shareware from the UK, a very nicely done Icon Matching game. **#852: Elimouse Alphabet Game; Mr Dash**, Boulder Dash clone from Germany (c/m); **Naarjek IV**, try and break into this computer!; **Soma**, excellent graphical block puzzle game; **SoS Hangman**, tweaked to run on a Falcon030 in the higher resolution modes; **Thurg 'N' Murg**, 50+ levels of action-packed arcade excitement. **#853: Fly-Ex**, the ultimate computer bug? **Grav**, a rotate and thrust game similar in concept to Thrust or Oids; a **Ms PacMan** clone; **Plax**, destroy all the baddies trying to rot your teeth; **Teserae**, yet another Tetris clone; **Hot Wheels**, fast action, 1 or 2-player, car racing game. **#854: Jurassic**, a little exercise in using computer from Jurassic park; **Lunacy 3.1**, excellent Tetris clone; **Pure Logic**, nice logical type game; **Reaction II**, a much improved version of Reaction, a strategy board game; **Spacel**, game for 1 or 2 players, similar to the old Space War genre, complete with hyperspace, expanded universe, etc; **Thingy**, a funky little sound and colour proggy; **LIFE Bugs**, a simulation of life. **#855: Droid**, fight your way through the hordes of enemy robots and artillery; **Triad**, a space strategy/arcade game for 1 or 2 players; **Warship** (Broadside), a 2-player naval strategy game. **#856: BatInvaders**, a Space Invaders clone; **BatRisk**, a computer version of the board game Risk; **BatSolitaire**, solitaire card game similar to the famous solitaire game found on Windows systems; **BatSub**, a SEAFOX clone; **DungeonLord**, an interesting hack and slash

game with an interface reminiscent of Dungeon Master; **Maze**, 2-player action for Tag or Shoot games.

#857: Cold Revenge v1, space combat game for 1 to 4 computers and players; Desktop Entertainment Pac, Vol 1, 3 shareware game accs: **Puzzle Slide**, **Tic Tac Toe**, and **Flip-Flop**; **Gnu chess v3.1**, chess game with a lot of nice features, including a nicely done graphic interface.

#858: Grandad and the Quest for the Holey Vest. A tongue-in-cheek graphic adventure (a bit rude in places). Shareware.

#859: Midi Battle, a full screen (STE) 8-way scrollingtank/maze/shootemup style game for both the ST and the STE. The game is MIDI networkable for head to head battles between 2 players.

#860/#861 IBS Pegasus, a game of outer space colonization. You command a ship and must deal with all aspects of running the ship while getting to your colonization destination. The fate of mankind is in your hands. This is a two-disk set. You must have both to play this game. Shareware from Deto Soft.

OTHER NEW DISKS THIS MONTH

#863: Word Quest (v3.10), a word search puzzle maker. Should run on Falcon030 or TT030. Commercial product now distributable as shareware! Includes two sets of ready-to-use puzzles. (C/M)

#864: Uncle Carl Utilities. BELEF22B v2.02b, the Universal Compression Utility Shell, allows you to convert any of your archive files from ANY one format to another! **HeidiSeek v2.07a**, the file finding and maintenance utility, allows you to search individual or consecutive drives for ANY file that matches YOUR search string. **ProFile! v1.01c**, the Floppy and Hard Disk Librarian, allows you to scan ALL directories and save that information to any of 3 possible file formats! **Pro-Lock! v1.05** allows you to lock access to your computer by entering a user defined password.

#865: AtariWorks No. 2. AtariWorks Scrapbook file utility; AtariWorks Small Frames; AW_TXTFX details for creating 3 text effects including drop-caps; 2_COLUMN, a tutorial on creating 2 column documents; AW_94CAL, the 1994 calendar; AW_FLORA, 28 floral graphics; AW_ALIN2, template for a landscape border on 1" margins; and GENie Speedo GDOS messages 7/15/93 to 8/18/93.

#866: AtariWorks No. 3. GENie AW messages (9/13/93–11/5/93); AW_PRALN, template for AW printer alignment and tutorial on alignment technique; AW_WDING, extended character set from ASCII 127 thru 255 plus the complete More Wingbats character set; AW_POPUP, "popup" dimensional Holiday table decoration. AW_PATCH, a ZAP

file to patch HotWire; DINGBATS, character map of ITC Zapf Dingbat font; WKS_INVNC, custom invoice with nice graphic borders.

#867: Triplink BBS V7.2. Easy to setup/run. BBS with 64 file areas, 64 message bases, up to 4.9 billion messages, terminal support for VT52, VT100, VT102, ANSI, IG and ASCII file protocols: xmodem/ymodem (and batch)/zmodem (and batch), built in verbose for ZIP / ARC / LZH files and you can extract files using the right TTP's. Much, much, more.

#868: Teddy-Term2 telecomm program, a great program for those who don't need all the bells and whistles, just reliable and easy to use communications software; plus latest version of **MaxiMiser**, which will read messages and read them offline.

#869: Storm v1.00, shareware telecommunications program features multiple editing windows with true word-wrap, Basic script language, loadable file transfers and terminal emulations and background dialer, Xmodem, Ymodem, Zmodem and BPlus file transfers, VT100, Vidtex, and TTY terminal emulations. Docs incl. Plus V1.18 of **Mountain QWK** offline mail reader, now fully compatible with the Geneva Multitasking AES, MultiTOS, Speedo GDOS, and the Falcon030.

#870: Applications: Grammarian V1.1.0, check your documents for grammatical errors. (C/M) TT Compatible. **MyDraw 1.10**, German GEM graphics editor with full Speedo support. **No Frills** Label program V1.05, create, add, and edit an address file to use for reference or printing labels. **Tera-Desk v1.36**, a very impressive replacement desktop.

#871: Version 3.0 of the **German to English translator**. This one fixes the background music problem and a few others.

#872: ARC/LZH Archiver. Everything you need to compress/uncompress ARC and LZH files.

#873: A Tribute to Frank. All the ST Update columns, the product reviews, and the articles written by Frank Sommers for CN from 1986 through 1993.

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Evangelo's Atariwares

Evangelo inadvertently left out his phone number in his ad in the November, 1993 issue of CN (page 53). The number is

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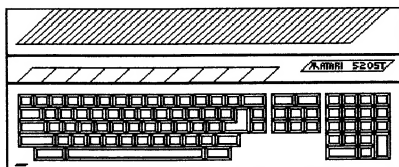
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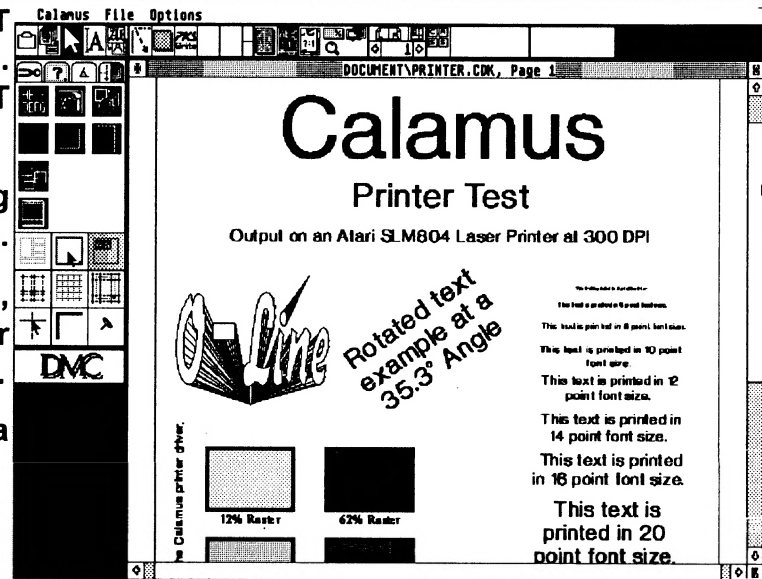
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